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Health Hazards in the Dry Cleaning Industry

A Preliminary Report of a Survey of Dry Cleaning Establishments in the Detroit Metropolitan Area

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THE chief purpose of this investigation has been to determine the working conditions in the dry cleaning industry, with emphasis on its outstanding health hazards. In order to obtain a true picture of the industry as it serves a large and concentrated population and in order to eliminate those variables which ordinances or regulations might impose within the city limits, the survey was extended to the Detroit metropolitan area. Since plants coming under the jurisdiction of both the Michigan and the Detroit Departments of Health were involved in the survey, their respective Bureaus of Industrial Hygiene coöperated in the field work and the preparation of this report.

The area covered includes all of the incorporated municipalities adjacent to and contributing to the life of the City of Detroit and certain well populated unincorporated areas. Not included are largely open agricultural sections devoted to farming and truck gardening.

From departments which license such establishments and from fire chiefs and other public officials, an original list of dry cleaning establishments was created. This list was supplemented from other sources, such as telephone directories and classified advertising, until not only all plants actually doing cleaning were located and inspected but all "pick-up" stations as well were visited to make sure that cleaning on a small scale was not being overlooked.

The investigation may be termed a preliminary engineering survey to determine the types of equipment and kinds of solvents used, number of employees involved, existing and potential health hazards, control measures provided, and the medical or first aid requirements needed or provided. Some qualitative and quantitative measure-

ments of the concentration of vapors and gases present in the establishments were made, but no attempt at determining the physical condition of the individual employee was undertaken.

TRADE PRACTICES

The dry cleaning industry has been subject to continuous innovation. In the beginning, dry cleaning was accomplished merely by dipping. The solvent, originally gasoline or an equivalent, was merely placed in a tub, and in this was submerged the garment to be cleaned. Repeated explosions and fires quickly demonstrated the danger of this practice.

The original tub dipping has almost entirely disappeared. Primitive methods have given way to enclosed or partly closed systems. In some, at least, of the highly developed devices, cleaning and drying take place in one operation without the necessity of opening the container, and thus without introducing a high concentration of vapors into the work room. The shift from the completely open system using tubs or vats to the semi-closed or completely closed systems has been brought about primarily by legal or economic pressure. Fire and explosion hazards have rightly led to regulations in most cities and states. Upon the introduction of non-flammable solvents, it was found that wastage through evaporation in the open systems made the use of these more costly agents uneconomical. As a consequence, in late years there has been a definite trend toward closed systems. If the worker, through the operation of closed systems, is less exposed to the evaporation of solvents, and if these devices obviate the necessity of hand contact with these damaging agents, it manifestly follows that the workers are less likely to be injured through the inhalation of poisonous vapors or to acquire skin diseases through contact with cleaning liquids.

Experience with closed systems tends to emphasize the dangers from dry cleaning processes carried out in completely open systems and in those semi-closed systems which still provide opportunities for the creation of dangerous quantities of vapors and for skin contact with the substances employed.

All considered, it is necessary to recognize that many health hazards are widely prevalent in the dry cleaning industry; that legal restrictions adequate to the situation have not been provided in many localities; and that advantages have been taken with respect to the many opportunities for the evasion of such legal provisions as have been instituted. Moreover, it is apparent that health officials have not been fully cognizant of the extent of the dangers that, at least theoretically, and to some extent practically, reside in the trade practices attending dry cleaning.

Few commercial dry cleaners limit themselves to one place of business. Many dry cleaning establishments maintain central plants, and in addition scores of stations without any facilities for actual dry cleaning, which serve primarily as intake or delivery points. In some instances, these "pick-up" stations are owned and operated by the management of the central plant, but for the most part, they are privately owned and served by the central plant on a wholesale basis. In addition to the "pick-up" stations, the industry employs a large number of salesmen or drivers. These men usually cover a prescribed territory and are employed on a salary plus or straight commission basis. The operation of stations for pick-up and delivery work provides opportunities for the location of the actual dry cleaning plants outside city limits. This may introduce occasion for avoidance of compliance with local regulations.

Dry cleaning is commonly associated with garments such as suits and dresses.

While these articles do make up the great majority of fabrics subjected to cleaning, a fair amount of dry cleaning is extended to carpets, rugs, hats, leather goods, fur and animal hair products. However, the fundamental practices are substantially the same in all branches of the industry. Typical high grade practices are now described.

When the garments reach the dry cleaning plant, they are marked for identification. They are next searched and all articles removed from the pockets. As a first step in the actual cleaning, all cuffs and seams are brushed, after which the clothing is placed in the washer. Modern practice requires that the garments be washed until the solvent being circulated through the machine comes from the washer clear and free from turbidity. All during the washing process, the solvent is being passed through a "closed" system, from the washer to a filter or other cleansing unit and back into the washer. Sight glasses on the influent and effluent lines give the cleaner ample opportunity for careful observation of the progress of each wash.

In closed systems, the garments are extracted and dried in the washer itself. After the cleansing is complete, the solvent is drawn off, the washer speeded up in order that the major portion of the solvent in the garments may be removed by centrifugal force. Following this, quantities of hot air are passed through the machine. As an economy measure, where halogenated hydrocarbons are used as cleaning fluids, an attempt is usually made to recover the solvent from the discharged air. This is done by the use of refrigeration, cold water coils or activated carbon filters. Theoretically at least, garments come from such systems entirely free from any traces of solvents. Practically, this was not found to be so.

In other installations, the garments are removed from the washer by hand and placed in a centrifuge extractor. After being extracted as dry as possible in this machine, they are placed in a tumbler. The tumbler consists of a rotating cylinder through which hot air is passed until the garments are dried. The exhaust from the tumblers is generally discharged directly into the atmosphere outside the building.

About 10 per cent of the garments that are dry cleaned require spotting. The spotter, who is a real artist in his work, must diagnose the cause of each spot or stain, since different cleaning agents are needed, according to the cause of each. After the spots have been removed, the garments rejoin the other 90 per cent for the final operation of pressing. Steam presses are generally used, and the operation is a familiar one, known to all who have occasion to visit tailoring and pressing shops.

For garments of delicate texture, different handling is needed. The types of washers vary somewhat from the standard rotary washer and the drying process varies from that already described. The latter is accomplished by hanging the garments in a special room or chamber into which hot air is forced. The final step of pressing is hand work instead of steam press work as with the heavier garments.

Naturally, the processes just described do not apply to all systems of dry cleaning. There are extremes beyond and modifications between all the methods listed.

QUALITIES DESIRED IN A SOLVENT

A solvent, in order to be suitable for dry cleaning processes, must have several important properties.

1. It must be cheap and readily available.
2. It must be a reasonably good solvent for greases and body waste products.
3. It must be inert to the fabrics to be cleaned in it and to the dyes as well.

4. It must lend itself to some purification processes for reclamation purposes when it becomes dirty.

5. It must be sufficiently volatile in order that its complete removal from cleaned fabrics may be rapidly accomplished without objectionable residual odors.

6. It must have a high flash point in order to reduce explosion and fire risks.

7. It must be dry (containing no water and having no alcoholic properties).

8. Lastly, but of prime consideration, it must possess a low order of toxicity.

In the earlier days of dry cleaning, benzine (gasoline) was used. The danger of explosion and the fire hazard early resulted in its replacement by cleaners' naphtha (boiling point 200°F.–325°F., flash point approximately 25° F.), a petroleum fraction. Frequent explosions and fires, resulting in damaged goods and high insurance rates, led to the introduction of Stoddard's solvent, a petroleum fraction (maximum boiling point 410°F., flash point 104°F.). While this solvent possesses low toxic properties, fire insurance regulations permit its use only under certain definite and sometimes inconvenient conditions. For years the use of a nonflammable solvent has been recognized as desirable, but the only commercially available ones, carbon tetrachloride and chloroform, were too expensive for wide use. With the introduction of cracked petroleum and the subsequent utilization of the unsaturated gaseous byproducts, many new halogenated solvents became available. All met the requirements of a dry cleaning solvent very well and many of them are just now being introduced to the industry. Recently, to avoid the embarrassment of fire regulations, a new petroleum fraction, F-140 (flash point 140°F.), has been introduced but is still in the developmental stage.

The following list includes the chief solvents which are available for use either individually or in combination with one another.

Benzol (C_6H_6)	Dichlorethylene
Petroleum naphtha	Trichlorethylene
Stoddard's solvent	1,1,1-trichlorethane
Gasoline	1,1,2-trichlorethane
F-140	1,1,1,2-tetrachlorethane
Carbon tetrachloride	Ethylene dichloride

CHEMISTRY OF SOLVENTS IN COMMON USE

In general, petroleum fractions are very stable and enter into chemical reactions only with unusually reactive agents or under extreme conditions of temperature and pressure. Unquestionably the presence of small amounts of impurities in the solvents as a result of the process of manufacturing may be of consequence, but the usual method of treating solvents in the dry cleaning plant is well designed to remove such impurities. In the routine use of the solvent with the addition of many kinds of detergents and the accumulation of body waste, dirt and the like, it probably picks up impurities of a nature harmful to the cleaner. If an adequate reclamation system is in use in the plant, no danger should arise. These facts emphasize the need for satisfactory purification systems.

When the halogenated hydrocarbons or the so-called synthetic solvents are considered, the situation is quite different. These solvents as a class are relatively active. In the presence of alkalies, they tend to split off chlorine with the formation of alkali chlorides; in the presence of water they tend to hydrolize with the formation of hydrogen chloride or hydrochloric acid depending upon the amount of water present. The compounds are susceptible of rather easy oxidation so that in the presence of atmospheric oxygen, certain decomposition compounds may be formed. Halogenated solvent vapor, when exposed to light and atmospheric oxygen, or elevated temperatures such as are produced on contact with hot steam pipes, may become oxidized with the formation of carbonyl chloride

(phosgene) and chlorine. The well known toxicity of phosgene possibly may, in some instances, enter into the totality of exposures connected with halogenated hydrocarbon vapors. Due to these chemical changes, it becomes apparent that if halogenated hydrocarbons are to be used for dry cleaning solvents, they should be used in completely closed systems, no chemicals which promote their decomposition should be added, and no high temperatures should be employed if atmospheric oxygen is present.

Furthermore, special care should be taken in the selection of materials for use in the construction of machinery, if the metal of that machinery is to come into contact with the solvent, lest the metal activate undesirable decomposition. The intelligent and proper use of halogenated solvents in the dry cleaning industry or in any other industry cannot be too highly emphasized.

SPOTTING AGENTS

Spotting is an art requiring long experience and good judgment on the part of the spotter. Each one will have certain chemicals or mixtures which he believes to be most effective on a type of spot or stain. For this reason, it is not easy to compile a list of chemicals which may be found at any individual spotting board, but one may compile a list of chemicals which might be encountered in an inspection of a number of dry cleaning plants. While many chemicals are used in spotting processes, most spots are removed with water, dilute acetic acid, or dilute ammonium hydroxide. The following list includes most of the chemicals which are used either alone or in combination for spotting processes.

SPOTTING AGENTS

Acetic acid	Isopropyl alcohol
Acetone	Lactic acid
Ammonium hydroxide	Lysol
Amyl acetate	Magnesium carbonate
Amyl alcohol	Methanol
Benzene	Oleic acid
Butylcellosolve	Oxalic acid
Borax	Potassium permanganate
Carbon disulphide	Pyridine
Carbon tetrachloride	Rapid acting enzymes for albumen, etc.
Castor oil	Sodium cyanide (rare)
Chloride of lime (calcium chloro-hypochlorite)	Sodium hydrosulphite
Chloroform	Sodium chloride
Citric acid	Sodium lauryl sulphonate
Cresylic acid	Sodium perborate
Diethyl ether	Sodium sulphite
Dry-cleaning soap	Sodium thiosulphite
Ethyl acetate	Sulphonated oils
Ethyl alcohol denatured with methanol	Sulphurous acid
Ethylene dichloride	Tetrachlorethane
Ethylene glycol	Tetralin
Glycerine (Glycerol)	Trichlorethylene
Hydrofluoric acid	Tri-sodium phosphate
Hydrochloric acid	Triethanolamine
Hydrogen peroxide	Water
Hexolin	Xylene

MOTH-PROOFING

Many attempts have been made to apply moth-proofing materials to garments in the dry cleaning plant. Older methods involve spraying the garments with arsenic compounds, which, although they give adequate protection to the garments, exposed both the workers and the wearers of the garments to the dangers of arsenic poisoning. Furthermore, spraying of the individual garments greatly increased the cost of handling. Inasmuch as moth-proofing was usually offered as a free service, it was not profitable to conduct the operation. Recently various moth-proofing preparations have appeared which are added directly to the solvent, from which they are preferentially absorbed by the clothes. Obviously, this method of moth-proofing is economically practical since it involves no additional labor for its accomplishment. Inasmuch as the cost of the preparations is not great, the cost of the treatment is not only negligible, but yields good returns in advertising value. Such preparations

are expected to come into general use within the next few years.

No information is available as to the exact ingredients of these preparations since in every case the manufacturer is keeping the formula secret. As far as is known, no reliable data are available as to their toxicity to man.

A survey of patent literature and other sources shows that many chemicals have been proposed for this purpose. The following list includes some of these materials:

INGREDIENTS OF MOTH-PROOFING PREPARATIONS

1. The condensation products of Isatin-5-sulphonic acid with amyl cresol (acid condensing agent)
2. The condensation products of Isatin-5-sulphonic acid with p-tert-amyl phenol (acid condensing agent)
3. The condensation products of N-benzyl-isatin sulphonic acid with thymol (in presence of stannic chloride, $SnCl_4$)
4. Sodium aluminum silica fluoride
5. Chloroxylenols (mixed)
6. Trinitro-isobutyl-xylene
7. Sodium fluoride
8. Sodium taurocholate
9. p-nitro-chlorobenzene
10. Dichlorobenzene
11. Fluoro-derivatives of naphthalene, biphenyl, aniline, phenol, acetic acid and methane
12. 1,2,3,4-tetrahydronaphthalene
13. 3, 4 - dichlorobenzenesulphomethylamide and diethylbutylglycolphosphate
14. 3, 4 - dichlorobenzenesulphodiethylamide and tri-isoamylphosphate
15. 3,4-dichlorobenzenesulphobutylamide and tritolylphosphate
16. 90% propylene dichloride and 10% carbon tetrachloride
17. Sodium arsenite solutions
18. Solvent naphtha or diphenyl methane, diphenylethane or biphenyl
19. 1,3-dichlorobenzene-4-sulpho-1, 3-phenylene-diamine plus diethylbutylglycol phosphate
20. Sodium 3′5,5′, 4″-pentachloro 2,2′-dimethoxytriphenyl methane - 2″ - sulphonic acid. Other substituted triaryl methanes may be used.
21. p-dichlorobenzene
22. Naphthalene

It is expected that in the near future many dry cleaners will have some kind of vault-type moth-proof storage available. The most familiar is cold storage, the cold being provided by artificial refrigeration usually employing sulphur dioxide, methyl chloride, or carbon dioxide as a refrigerating gas, since ammonia machines are too expensive to operate on such small installations. This type of storage introduces the dangers of commercial refrigeration to the industry.

Another popular type of moth-proofing storage is that recommended by the U. S. Bureau of Standards. This method involves the storage of clothes in an atmosphere the humidity of which is properly controlled and the temperature of which is permitted to vary through a certain specified range. An advantage of this system lies in the fact that moth larvae are actually killed in this environment.

A third method involves fumigation of the clothes with some type of gas toxic to the moths and their larvae. Formerly hydrogen cyanide was commonly used for this purpose. At the present time a new gas, "malium," is being widely used. These three types of storage may be used individually or in some combination with one another.

It is impossible at the present time to evaluate the hazards which this new phase of the dry cleaning industry has introduced.

RETEXTURING

In the manufacture of textiles, especially woolen and silk materials, an important part of the process consists in adding some type of oil or lubricant to the fabric. The presence of such oils improves the sheen and texture, increases the wearing quality, and makes the fabric water-repellent. Unfortunately, dry cleaning effectively removes these oils or lubricants from the fabrics with the result that a frequently dry cleaned garment becomes dull in appearance and tends to wear out quickly due to the friction of

unlubricated fibers on one another. Recently, attempts have been made to remedy this condition. The problem of retexturing is still in the research and developmental state, but its use even now is beginning to appear in a few dry cleaning plants and it is safe to predict that within the next few years retexturing will become as important a part of the dry cleaning process as pressing the clean garment. The retexturing agent must be completely absorbed by the fiber itself without leaving an external greasy film. Paraffin wax, dibutyl phthalate, aluminum stearate, diglycololeate and glycolboriborate, chlorinated derivatives of naphthalene, anthracene, biphenyl ether and various sulphonated oils may be used and, in some instances, are being used as lustering and retexturing agents. Inasmuch as virtually nothing is known concerning the toxicity of these substances, it is not possible to appraise these hazards, but only to suggest that the toxicity of these materials must be investigated at some time in the near future.

RECLAMATION OF SOLVENTS

In the course of ordinary use the dry cleaning solvents become contaminated with grease, mechanical dirt, dye, unsaturated compounds, waste products of the body, and various soaps and detergents used as cleaning agents. Reclamation processes fall definitely into two groups, chemical and physical. Both may be applied to the stable petroleum fractions, but only physical methods may be used for halogenated solvents owing to their inherent instability.

Two chemical methods are in common use. One is the so-called "continuous" caustic settling system in which process the solvent to be reclaimed is bubbled through a strong potassium hydroxide solution in a large tank. Separation of the solvent from the chemical is effected by gravity. The waste sludge is periodically withdrawn from the tank, which is then recharged with fresh caustic solution.

The second method, which is distinctly superior in effectiveness, is a so-called "batch" process. A convenient volume of solvent and a proportionate volume of concentrated commercial sulphuric acid are placed in a special tank and the whole thoroughly mixed. The concentrated acid is used to prevent the decomposition of the steel tank and pipes. This treatment renders most of the impurities water soluble. The batch is then thoroughly washed with water until the wash water is neutral. A small amount of concentrated potassium hydroxide is added, mixed, and washed out with water until neutral. The solvent is now considered ready for use.

Several physical methods are available, the most effective of which is that of distillation. This is usually done with a large capacity vacuum still of the continuous type. About once a week depending upon the condition of the solvent, the still must be opened and cleaned out. This is usually a hazardous task, as the operator is exposed to an accumulation of waste material and to a high concentration of organic vapor.

The next most generally used method, frequently used concurrently with distillation, is that of continuous pressure filtration. While several types of filters are used, they all utilize the principle of circulating the solvent through a filter medium supported either on a bag or on a monel metal screen. Filter powder is added directly to the solvent. Some common powders are Filteraid, Fuller's Earth, diatomaceous earth, diatomaceous silica, activated silica, or activated alumina. A further treatment frequently utilized with continuous filter systems involves the addition of a finely powdered activated carbon to the solvent. This preferentially absorbs unsat-

urated hydrocarbons, body wastes, and pigmenting substances from the solution.

Another physical purification method now virtually obsolete involves purely mechanical centrifugal clarification. The dirty solvent is passed through a centrifugal machine similar to a cream separator, thus removing, mechanically, particles from the solution. Obviously this method of treatment will not remove dissolved impurities.

In modern dry cleaning plants reclamation is accomplished by a combination of distillation, continuous pressure filtration, and activated carbon. Needless to say, only this type of procedure is available for the reclamation of halogenated organic solvents.

HOME DRY CLEANING

Since the principal cost of dry cleaning arises in the finishing and delivery of the garments rather than in their actual cleaning, a considerable apparent saving can be effected by conducting dry cleaning at home thus avoiding the latter charges.

Such dry cleaning operations are usually conducted by the housewife in the basement or kitchen of the home. The clothes are washed in an open vessel containing cleaner's naphtha, which may be purchased at popular prices at almost any filling station. This material is flammable and its vapors may be readily ignited by static sparks produced by friction of silk garments upon one another, open flames, hot stoves, faulty electrical connections, washing machine and vacuum cleaner motors, electric irons, toasters and other household electrical appliances. Even such a simple operation as turning off or on an electric light may provide the necessary spark. As a result, serious accidents arising from home dry cleaning operations are common. This danger may be minimized to a certain extent by working out of doors on a rainy day when the humidity is high. This avoids the accumulation of high vapor concentrations in confined places and reduces the danger from static sparks. This latter danger is especially high on a clear winter day and in any heated house.

To eliminate the fire hazard, so-called fire-proof or safety solvents have been introduced. These solvents consist of cleaner's naphtha, with enough chlorinated hydrocarbon solvent, such as carbon tetrachloride, added to raise the flash point beyond the danger zone. Unfortunately the vapors of such solvents are much more toxic than those of cleaner's naphtha due to the presence of chlorinated compounds. The only end gained is the replacement of a fire hazard with an almost equally serious health hazard. The use of a comparatively non-flammable petroleum fraction such as Stoddard's solvent is not feasible, due to the difficulty of driving the residual solvent and odor from the fabric without the use of heat.

When all aspects of the situation are taken into consideration, it is very doubtful if dry cleaning at home affords to the housewife a real economy since the great fire and health hazards combined with the definitely inferior cleaning clearly offset the few dollars a year saved. In most instances, careful selection of fabrics at the time of purchase, accompanied by properly conducted wet-wash methods will produce results superior to home dry cleaning and at no risk to the housewife. Under few, if any, circumstances, can dry cleaning at home be considered a wise practice.

SOAPS AND DETERGENTS

Successful dry cleaning with petroleum solvents cannot be accomplished unless some emulsifying agent or water bearing agent is added to the solvent. Such additions are necessary in order to keep mechanical dirt in suspension in the solvent until it may be removed by a filter or some other process and

to permit a certain amount of solution of materials which are insoluble in organic solvents. These agents fall into 4 classes:

1. Aqueous agents such as ammonium hydroxide and alcohol. Many cleaners add large quantities of ammonium hydroxide to the solvent, sufficient, in fact, to give it a strong ammoniacal odor.

2. Soaps—The soaps are the most important class. In order that they may be reasonably soluble in the solvent, one of the potash salts of the various fatty acids must be used. The most commonly used are the potash salts of oleic, palmitic, and stearic acids. Many of these soaps are either insufficiently soluble or their emulsions are of such large particle size that their salts will not pass through a pressure filter such as is used by the industry without their partial or complete removal from the solvents. Hence, special "filter" soaps are necessary for use in filter systems and differ from other soaps largely in that special emulsifying agents have been added which greatly reduce the particle size of the soap suspension.

3. Aqueous solutions of such materials are sodium carbonate, borax, trisodium phosphate, and the like.

4. Emulsifying agents such as sulphonated oils, sulphonated long chain alcohols, esters such as diglyco-oleate and hydrogenated aromatic compounds (for instance tetralin and hexalin).

The present trend in detergents is definitely toward the sulphonated oils, for example, sulphonated cocoanut oil, sulphonated palm oil, sulphonated fish oils.

In order to give a picture of the chemical composition of some typical soaps and other detergents, a few formulae are included.

In general, the potassium salts of stearic, palmitic, and oleic acids, the triethanolamine salts of fatty acids, sulphonated oils, sulphonated alcohols, long chain alcohols such as cetyl alcohol, ethylene glycol esters of fatty acids and aqueous solutions of ammonia, alcohol, trisodium phosphate, sodium carbonate, and the like are used.

Formula No. 1

	Parts
Oleic acid	1
Cyclohexanol	1
Carbon tetrachloride	1
Ammonium hydroxide (26 be)	0.2
Water	0.5

Formula No. 2

	Parts
Oleic acid	107
Butylcellosolve *	27
Cleaner's naphtha	25
Triethanolamine	19.7
Potassium hydroxide	8.3
Water	13.5

* Isopropyl alcohol may be substituted as a coupling agent.

"PICK-UP" STATIONS

In addition to the 97 plants investigated, 828 "pick-up" stations were visited during the course of this survey. No attempt was made to list their employees, but several points of interest were investigated. It was first determined whether any dry cleaning was actually carried on at the premises or whether it was all sent to an established plant. A number of small plants that

TABLE I

General Classification of Plants, Employees, and "Pick-Up" Stations

	Number of Plants			
	Detroit	Metropolitan Area	Total	Per cent Total
Number of Plants				
Total	74	23	97	....
Petroleum Solvents	57	13	70	72.2
Synthetic Solvents	17	10	27	27.8
Number of Employees				
Total	2,033	541	2,574	....
Men	1,108	319	1,427	55.5
Women	925	222	1,147	44.5
Number of "Pick-Up Stations				
Total	754	74	828	....
Doing Steam-Pressing	618	63	681	82.3

TABLE II

Distribution of Inside Employees

	Detroit		Metropolitan Area		Total		Grand Total
	M.	F.	M.	F.	M.	F.	
Administrative	113	155	28	41	141	196	337
Managers	92	1	25	..	117	1	
Clerks	21	154	3	41	24	195	
Assembly and Inspection	112	135	23	27	135	162	297
Shippers and Receivers	97	129	22	25	119	154	
Helpers	8	6	1	2	9	8	
Foremen	7	...	..	..	7	...	
Maintenance	11	2	5	2	16	4	20
Janitors	5	...	..	..	5	...	
Maintenance	1	...	3	..	4	...	
Repair	5	2	2	2	7	4	
Boiler Operation	25	...	5	..	30	...	30
Firemen	14	...	3	..	17	...	
Watchmen	11	...	2	..	13	...	
Dry Cleaning	110	...	34	..	144	...	144
Cleaners and Helpers	110	...	34	..	144	...	
Wet Cleaning	54	1	18	..	72	1	73
Rough Spotters	29	1	13	..	42	1	
Steam Cleaners	21	...	4	..	25	...	
Washmen	4	...	1	..	5	...	
Finishing	270	481	61	92	331	573	904
Finishers	...	2	..	..	...	2	
Pressers—Fancy	...	325	..	67	...	392	
Pressers—Steam	270	154	61	25	331	179	
Spotting	51	36	21	7	72	43	115
Paint Scratchers	1	...	..	..	1	...	
Spotters—Fancy	50	36	21	7	71	43	
Tailoring	32	107	12	53	44	160	204
Tailors	26	12	8	10	34	22	
Seamstresses	5	94	3	43	8	137	
Others	1	1	1	..	2	1	
Hatters	8	8	1	..	9	8	17
Total Inside Employees	786	925	208	222	994	1,147	2,141

would have been overlooked otherwise were found in this manner. Whether steam pressing was done on the premises was also determined. Where steam presses were used, an inquiry was made as to the type of steam generator, and whether this boiler was furnished with a proper flue or fume pipe.

These stations furnish approximately 700 additional persons who are exposed

TABLE III

Number of Employees

Number of Employees	Detroit	Metropolitan Area	Total	Per cent of Grand Total
10 or less	33	11	44	45.3
11– 25	17	5	22	22.7
26– 50	13	5	18	18.6
51–100	8	1	9	9.3
Over 100	3	1	4	4.1
Totals	74	23	97	100.0

to high temperatures from steam. In addition, some of these pressers are exposed to carbon monoxide fumes because of no fume pipe or an improper fume pipe on the steam boilers, or defective boilers. Although this survey was conducted in the summer and early fall when doors and windows were generally wide open, fumes from the burners were noticeable in many stations. This was particularly true in the case of the small oil burning type.

LEGISLATION

For years, many cities and states have enforced ordinances or regulations for the construction of dry cleaning plants and for the conduct of the industry. At the time most of these ordinances or regulations were enacted, naphtha and gasoline were almost universally used as the solvents, and as a consequence extreme fire hazards existed. Legislation, therefore, was designed to reduce the fire hazard in the plant and to adjoining property. Little or no concern was given to any health hazard which might be present. With the introduction of synthetic solvents possessing no fire hazards, plant owners saw an opportunity of getting away from such regulations and of conducting their businesses in existing structures.

With few exceptions, state laws and local ordinances define the industry; regulate the type of building and location in which it may be conducted; describe in some detail the heating, lighting, and ventilation of said buildings; indicate within limits the construction of the equipment that may be used; and stipulate the conditions governing the storage, handling, refinement, and use of the solvents. Little more could be asked if such laws included protection for the health of the workers. There are two important shortcomings in our present laws. In defining the industry, only those enterprises employing a solvent of a flammable or explosive nature are usually included. Further, with rare exception, the regulations are designed not entirely to rid the atmosphere of solvent vapors but merely to keep the concentration of such vapors below the explosive range. Since the synthetic solvents used in the industry are classed as non-flammable and non-explosive, most existing regulations or laws do not govern their use.

Notice is taken that some few states, such as Ohio, have provided codes limiting the use of chlorinated hydrocarbons to closed systems.

TOXICITY AND CLINICAL MANIFESTATIONS

Because of space limitation, all reference to physiologic properties of solvents, clinical manifestations, frequency of cases, and methods of diagnosis are omitted. Discussions of this character may readily be found in the publications of the Smyths, Hayhurst, McCord, Smith, Lamson, Wirtzschafter, and many others.

Of greater importance for the present presentation, is the bringing to light of scores of substances widely used in the dry cleaning industry which are little known to industrial hygienists, at least under the circumstances attending dry cleaning work. At the present time, appraisal of these little known substances in terms of toxic properties constitutes a greater need than further elaboration upon the properties of better known solvents.

Apart from the exposures that may grow out of the large number of agents directly used in cleaning work, and the reclamation of cleaning materials, a few other hazards, chiefly of physical nature, have been encountered. The outstanding ones are now briefly mentioned.

Excessive Temperature—The steam press operators are subjected to the heat from presses. This condition is particularly bad in places where the presses are not equipped with motor driven vacuum exhausts. To a lesser extent, hand pressers using electric hand irons are also subject to some high temperatures. In Table IV showing numbers exposed to various hazards, this latter group is not included as exposed to excessive temperatures.

TABLE IV

Employee Exposure

Exposure	*Male*	*Female*	*Total*
Solvents			
Naphtha	17	0	17
Gasoline	1	0	1
Stoddard's Solvent	191	0	191
F-140	4	0	4
Chlorinated Solvents	67	27	94
Spotting Fluids	202	52	254
Heat (Steam Pressing)	458	326	784
Moisture (Steam Cleaning)	47	0	47
Tenovitis	0	377	377
Posture	340	191	531
Carbon Monoxide	98	0	98
Total	1,425	973	2,398

Posture—The steam press operators are also subject to the hazards of posture. In operating the presses they are required to use both feet as well as their hands.

Excessive Moisture—The steam cleaners are the persons who do the wet washing and work generally under poor conditions. With their scrub brush and board they are usually located in the basement or in some out of the way corner of the building. The very nature of their occupation subjects them to constant wetting and only by the use of rubber boots and aprons are they able to keep even a semblance of dryness.

Tenovitis—The hand pressers are subject to a possible inflammation of the cords in the backs of their hands from the constant lifting and pressure on the irons.

Carbon Monoxide — Firemen and boiler operators are at least theoretically, if not practically, subject to carbon monoxide poisoning.

INSTRUMENTATION

In the conduct of this survey, three procedures chiefly have been utilized in the determination of the concentration of vapors present:

1. A combustible gas indicator, of special design, permitting of the measurement of gases and vapors in toxic as well as explosive ranges.
2. A halogen lamp, which chiefly affords qualitative information. This was particularly useful in tracing the spread of toxic chlorinated hydrocarbon vapors emanating from known points.
3. The quantitative determination of chlorinated hydrocarbon vapors through activated charcoal absorption.

SUMMARY

This report embraces the findings of an engineering investigation of the dry cleaning industry in the City of Detroit and its environs. Ninety-seven dry cleaning plants were investigated, together with 828 "pick-up" stations. This is a progress report, which, in many phases, especially with respect to medical and analytical data, is incomplete. From information now on hand it appears:

1. The total number of dangerous substances used in dry cleaning and ancillary operations is far in excess of the small number customarily associated with the dry cleaning industry. Scores of agents have some use

TABLE V

Safety and Medical Provisions

Items	*Detroit*	*Michigan*	*Total*
No. of Plants	74	23	97
No. of Employees	2,033	541	2,574
Safety Provisions			
Safety Director, Part Time	1	2	3
Safety Committee	0	1	1
Compensation Insurance	41	13	54
Other Forms Insurance	17	3	20
Medical Provisions			
First Aid Room	3	0	3
First Aid Kit	55	13	68
Trained First Aid Worker	3	2	5
Nurse	1	0	1
Sick Benefit Association	2	0	2
Sickness Records Available	1	6	7
Accident Records Available	32	9	41

which so far as is known have never been adequately investigated in connection with possible toxic properties.

2. In every instance of the use of chlorinated solvents or mixtures of chlorinated solvents with petroleum fractions as primary dry cleaning fluids, a definite exposure was found to exist. If these solvents are to be safely used in this industry, an extensive revision of current operating practices is in order.

3. With few exceptions, the use of Stoddard's Specification Solvent probably presents a minimum of hazard arising from the inhalation of vapors.

4. In most instances where very volatile petroleum fractions such as cleaner's naphtha and gasoline were used, unsafe concentrations of the vapors of these solvents were found to exist.

5. Regardless of the type of solvent in use, almost without exception some degree of dermatitis occurs on the hands and arms of workers. In many instances the degree of injury is trivial and of slight duration.

6. It is not yet possible safely to evaluate the exposures arising from the use of such new high-boiling petroleum fractions as the F-140, type.

7. Fancy spotters are undoubtedly exposed to a wide variety of solvent vapors as well as other chemicals, but the extent of this exposure is difficult to quantitate for the industry as a whole. Unquestionably, in specific instances, spotters have been exposed to chlorinated solvent vapors as much as cleaners working with these solvents.

8. In general, it is believed that the other hazards of the industry such as unnatural postures, tenovitis, excessive humidity, moisture, heat, and carbon monoxide are of minor significance.

Marrying a Nurse

W. E. TANNER recalled how some years ago Sir Cooper Perry had given the following advice to those who contemplated marrying a nurse, viz.: "Notice what shoes she wears, see her in mufti, and visit her parents." Mr. Tanner said that whatever a nurse might do when in mufti, when they knew in all truth that sweet artifice might be necessary, a nurse should remember that the beautiful simplicity of her uniform did not lend itself to the excessive use of rouge, lipstick, and the darker shades of nail varnish. Complete cleanliness, absolute tidiness, and well-shod feet were the complementary essentials of the scientifically trained practical nurse.—Editorial Notes. *J. Roy. Inst. Pub. Health & Hyg.*, July, 1938.

Methods of Estimating Postcensal Populations*

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ESTIMATES of population for the contemporary years after a federal census have been made by highly approximate methods for the states, cities, and counties in the United States. The degree of inaccuracy tends to vary directly with the time elapsed since the census, and inversely with the size of the population. Within 3 or 4 years' time the seriousness of the error for any of these types of areas is, on the average, large enough to render most uncertain comparisons of vital rates from year to year or from place to place. The value of population estimates in their numerous other applications is also impaired.

It should not be thought, however, that no progress has been made in the methodology of estimation since the U. S. Bureau of the Census and other agencies first began to make estimates. The bureau's adoption of the so-called "apportionment method" represented a definite advance over the earlier method of arithmetic increase. Recognition of the fact that postcensal estimates should be based upon contemporary data for the given area rather than upon merely some hypothesis of growth was another important step forward toward the creation of improved methods and technics. Attention is now being focused upon potential sources of such data and upon means of making them more useful as bases of population estimates.

Accordingly, methods that rest solely upon a hypothesis of growth will be dismissed with a bare mention. They include arithmetic and geometric progression, the fitting and extrapolation of other mathematical curves (especially the Pearl-Reed Curve), and the empirical procedure of Thompson and Whelton.[1]

From 1926 until 1934 the Bureau of the Census made its estimates for state and city populations by the apportionment formula. This formula assumes that the estimated postcensal increase in the national population was divided among these states or cities according to their shares in the national increase of the previous intercensal decade. The official state estimates for 1934, 1935, and 1936 were based upon vital statistics and elementary school enrollment data in a manner that will be described below. Censuses taken by 5 states were also utilized. The bureau has released no city estimates since 1933, and there have been no official estimates of the population of counties since the last census.[2]

There is not much of a problem remaining in the calculation of estimates

* Read at a Joint Session of the American Statistical Association and the Vital Statistics Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 8, 1937.

for the total population of continental United States. The excess of births over deaths and the difference between immigration and emigration are added cumulatively each year to the population at the last census. The only unknown quantities are the amount of underregistration of births and deaths and the extent of illegal immigration. Corrections have been made for the first two of these. Underregistration of births is certainly the most important of the three. It may have amounted to about 8 per cent of all births during the first half of the present decade. Yet despite these uncertainties, the bureau was able to estimate the population of the United States just prior to the last census date with an error of only +0.15 per cent.

Despite the experimentation that has been carried on from time to time in the Bureau of the Census and elsewhere, state and city estimates still pose a formidable problem. The unsatisfactory results of the apportionment formula are indicated by an average error of 6.88 per cent * for state populations computed for April 1, 1930. The corresponding average error for cities having 10,000 or more inhabitants in 1920 was far greater.

Let us first consider methods of making postcensal population estimates for states. For these, as for cities and counties, school statistics are the series of contemporary data that generally have the highest combined degree of utility, uniformity, and availability. The writer has demonstrated elsewhere [3] that any reasonable use of the elementary [4] school enrollment data collected from the states by the U. S. Office of Education yielded an average error for 1930 state populations that was significantly lower than that cited above for the apportionment formula. The best of these had an average error of 4.21 per cent. The corresponding root-mean-square deviations about zero per cent error were 10.14 per cent for apportionment and 6.32 per cent for enrollment. Further experimentation showed that enrollment data by age (rather than by grade) of comparable accuracy with those in the "School Attendance" chapter of the U. S. Census volumes could reduce, with proper manipulation, this average error to between 2 and 3 per cent. Unfortunately, such data are not now readily available for more than a few states.

While working at the Bureau of the Census in 1936, John D. Durand and the writer devised a somewhat similar method using existing data on enrollment in elementary grades. This method has been called the "migration and natural increase" method, and it was essentially the one used in the official state estimates for 1934, 1935, and 1936. It is a very elaborate and time consuming procedure. Essentially, however, the method falls into two parts. The difference between registered births and deaths, both corrected for underregistration, is considered as the postcensal natural increase and is added to the state population at the last census. The net interstate migration of school children is estimated from a state's actual and expected elementary school enrollment. The migratory gain or loss in this group is prorated to persons of all ages. The final net change due to migration is then added to the calculated natural increase and the census population to get the postcensal estimate. The main source of difficulty is finding the school enrollment that was expected had there been no migration. The detailed procedure is to be found only in unpublished reports.

There has not yet been an opportunity to test the method for a sufficiently large number of cases to

* Throughout this paper the term "average error" denotes mean percentage deviation from the enumerated population, disregarding the sign of the error.

define its relative worth with any degree of accuracy. A check against 8 state censuses taken from 1934 to 1936 showed an average error of 3.04 per cent. This average compares favorably with one of 3.84 per cent for the same states estimated by the apportionment formula. By all logical considerations this method is superior to the simpler ones using school enrollment, and it has already been shown that these give better results than the apportionment formula.

Nevertheless, we should strive rapidly to improve upon this new method for states. It has many obvious weaknesses, and we are certain that the resulting estimates are not in general adequate for the vital statistician. In a recent investigation undertaken at Princeton University, Durand demonstrated that wide margins of error in the estimated net migration result from necessary approximations in calculating the ratio of enrollment in grades 1–8 to enrollment in a given age group, such as 6–14. This difficulty could be eliminated by obtaining actual enrollment by age as the basic data. Accurate school censuses with carefully defined age limits would further simplify the method. Unfortunately, Durand also found that 28 school censuses taken in 1930 deviated by an average of 4.2 per cent from the enumerations of the same age group made by the federal census. Only 9 deviated by less than 2 per cent.

Other original work on methods utilizing elementary school enrollment is being carried on by Paul V. Lane of the California Taxpayer's Association.[5] He too has made separate estimates of population change from natural increase and net migration. His expected enrollment was arrived at by a study of the progression of school children through the grades. Enrollment in grades 2–7 in one year less "normal losses" (from death, withdrawal, and retardation) is compared with enrollment in grades 3–8 the next year. The difference is attributed to net migration. Apparently, however, no essentially satisfactory method has yet been found for ascertaining the rate of these "normal losses" in the schools of a given area. Lane's method may be applied equally well to cities and counties if births and deaths are properly allocated by residence.

School statistics might be improved so as to present accurate data on enrollment by age in all schools, private as well as public, corrected for the actual residence of the child; or they might take the form of school census figures collected every year, giving age at last birthday. These valuable data still would be able to inform us about the migratory movements of only a minority of the population. Inferences about the corresponding movements of persons in other age groups, particularly adults without young children, would remain highly speculative.

There are for most states but few contemporary series of statistics that can be used to supplement school data. One possible source is the registered deaths for specific age groups by sex and color. Lane and Durand independently worked out technics for utilizing such data in population estimates. Assuming that the specific death rates of 1930 for states have remained unchanged to the postcensal year or have changed in some specified way, they divided these rates into the corresponding registered deaths to obtain estimates of the population in the specific age groups.

It was found best to estimate only the population above school age by this method and to get the number of persons of school age and preschool age from school statistics and registered births. Durand has also tried limiting the procedure to deaths from non-epi-

demic causes. Although this approach involves a degree of circular reasoning when the estimates are applied to the calculation of crude death rates, it is far superior to population estimation based on total registered deaths and the crude death rate at the last census. In the very few comparisons that could be made with estimates from the migration and natural increase method, the latter appeared to be more satisfactory.

Let us now turn to postcensal estimates for cities. These are in general even worse than those for states, but there is a continually large demand for them. For city school enrollments the U. S. Office of Education does not make a separate classification of grades 1–8, but such data usually are available in local reports. The migration and natural increase method used for states is not readily applicable to cities. On the average, but by no means in all cases, school statistics even when used alone give more accurate results for cities than the apportionment formula. The major problem is to estimate the ratio of enrolled or enumerated children to the population of all ages. This is a surprisingly variable ratio. Over the period 1930 to 1935 this variability led to an average error of 6.52 per cent * in the population estimates for Massachusetts cities or towns of 10,000 or more inhabitants.

By way of compensation, there are many more series of pertinent contemporary data for cities than for states. These include the number of listings in city directories, population counts from real property inventories, and public utility records of consumers. All of these usually require extensive refinement. They may be used to supplement one another or school statistics.

Durand devoted considerable study to the contents of city directories when he was with the Bureau of the Census. Very often the number of individuals listed can be obtained only from the publisher. Other limitations are failure to confine the listings to the corporate area of the city, duplication through listing of an individual both at his residence and at his business address, and changes in the minimum age required for inclusion.

During 1934 real property inventories were taken by the United States Bureau of Foreign and Domestic Commerce in many large or medium sized cities. Since then others have also been financed from work relief funds. Most of the surveys included an enumeration of persons living in families. From the relationship of family and quasi-family or institutional population in 1930, the number of persons not living in families may be estimated. The sum of the enumerated family population and the derived quasi-family population represents an estimate of the total population. Of the 64 cities included in the 1934 real property inventories of the U. S. Bureau of Foreign and Domestic Commerce, 7 were also covered by recent state censuses. After adjustment to the proper date, the average discrepancy for these 7 was found to be 3.80 per cent.

The records of utility companies on domestic consumers of water, gas, and electricity, and telephone subscribers are moderately useful for population estimates. The chief weaknesses of these series lie in their close dependence upon economic conditions and in the difficulty of isolating the figures for the city proper, exclusive of suburbs. So few city populations have been estimated from the same type of public utility data that it is impossible to say more than that this source does not appear at present to be especially promising.

* Estimates were made from school census of children 7–13 inclusive and the 1930 ratio. The estimates were compared with the returns of the 1935 state census.

It may be recalled that state populations have been estimated from resident births, school enrollment, and age-specific deaths. These three series could be used for the age groups 0–4, 5–14, and 15 and over, respectively. Similar composite estimates can be made for cities. For example, the 1934 populations of 13 Massachusetts cities or towns having 25,000 or more inhabitants in 1930 were estimated from registered births, school enrollment, and directory listings. The average error was 3.40 per cent. When directory listings and school enrollment had been used separately the average errors were 6.03 and 3.77 per cent, respectively. Similar experimentation on other cities indicates that this approach is a promising one.

Another technic may be used when several series of data are available that do not apply to different age groups. If a list of city or state populations is being estimated, we may find the means of the corresponding estimates from two or more different methods. The average error of the series of combined estimates may be lower than the average error of any of the original series. This effect is obtained only when the errors by the original methods are not too disparate and when the corresponding errors are not correlated. For instance, three unrelated methods for the above 13 Massachusetts cities yielded 1934 estimates with average errors of 2.71, 3.40, and 3.40 per cent. The arithmetic mean of these estimates had an average error of only 2.31 per cent. It may also be remembered that the apportionment formula gave an average error of 6.88 per cent for state estimates as of 1930 and that a method using public elementary school enrollment gave one of 4.21 per cent. If the two estimates for each state are averaged we obtain a new average error for all state of only 3.71 per cent.

This technic of combining estimates has the disadvantage of giving larger errors for some of the populations in the series than those given by the best of the original methods. Very often one method may be superior to another in one section of the United States or in certain parts of a state but inferior in others. Where such a situation is known it is clearly the more sensible procedure to use different methods for different areas. However, one must study the relative worth of various methods to see whether in a particular state or city the past superiority of an otherwise inferior method represents part of a consistent pattern or merely a chance relationship.

From the size of the errors cited in this paper it can be seen that postcensal estimates despite recent improvements in methodology are still too inaccurate for scientific and most administrative uses. The writer feels that the greatest improvement in the future will come not from new technics or methods but from the exploitation of new series of contemporary data and the refinement of old ones. The Bureau of the Census ought to have a permanent section for making postcensal estimates of population. Meanwhile state and city planning boards and health departments should not be content with the arithmetic method or with curve-fitting. In their own experimentation they can test local material much more exhaustively than the Bureau of the Census can ever do. Although much progress thus may be made, it is not likely to remove the imperative need for more frequent federal censuses, supplemented by sample enumerations and locally undertaken census, or for a population register.

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results of all local censuses of cities since 1930.

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4. Elementary enrollment as used in this paper refers always to enrollment in grades 1–8 inclusive, regardless of whether grades 7 and 8 are in a junior high school system. In several southern states grades 1–7 inclusive are meant.

5. His findings are reports in that Association's publication, *The Tax Digest*.

"Federal Money is Not Manna from Heaven"

EDWARD S. Godfrey, Jr., M.D., New York State Commissioner of Health, in an address at the Conference of Health Officers and Public Health Nurses at Saratoga Springs recently, warned that federal funds allotted to New York State and to the several states for public health services should be spent wisely or not at all. "Even more important," he said, "these federal grants cannot replace current expenditures and must not replace local expenditures that might have been appropriated for health work were federal grants not available. State and federal expenditures must serve to stimulate local interest and local expenditure for the control of communicable disease."

Dr. Godfrey asserted that states and local governments must not lean heavily on the federal government for assistance in essential health services but rather the states must reserve every essential state right and must not fall into the dangerous tendency akin to that of relief clients looking to the government for their living. "Not only must we not become confirmed dependents; we must not become dependents at all. We must exert ourselves and use our resources to assist in every way possible to effect the early eradication of preventable disease."

Dr. Godfrey added that the public must understand that the provision of 1 nurse for 10,000 to 20,000 people must be regarded as wholly inadequate and that a nursing service on this scale merely touches the surface. It is also too superficial to produce a public impression. It can never implement the programs for the reduction of infant and maternal mortality, the rehabilitation of crippled children, the eradication of tuberculosis and of syphilis, or the reduction in pneumonia mortality—each and all of which we have every reason to believe the public wants us to do, that we want to do and that we can do if we are given the support we need.

Handicaps in the Normal Growth and Development of Rural Negro Children

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THE worth while racial potentialities of Negro infants born and reared in rural southern environment are not sufficiently well developed at chronological maturity to make them either a local community asset or prepare them for respectable social adjustment elsewhere. The longer one observes large cross-sections of these Negroes, the more true this statement appears to be.

One might expect that the unnecessarily high death rates among the young children, due to the operation of the law of "survival of the fittest," would eliminate the weak and leave only the strong. In many sections of the lowlands, if only the physical stature of the young adult is considered, the expectation is confirmed to some extent. If, on the other hand, one considers the whole individual; his physical and mental attributes, and his personality, together with their interrelationship, the wholesome, positive qualities are few.

The problem of the handicapped rural Negro is becoming increasingly serious. He is becoming more and more recognized as the reservoir for certain diseases, such as the venereal diseases and malaria. He is propagating an increasingly large percentage of the race and is becoming more responsible for a stigmatizing increase of juvenile delinquency and young adult crime. Many of the factors contributing to the latter two categories are due to the blind migration from the rural areas to metropolitan centers, and to his not being prepared for a respectable adjustment in a more complex society. He increases the city relief rolls and unemployment, and also becomes easy prey to temptations and criminal exploitations of his own race and the white race.

The rural Negro child is handicapped in normal growth and development, not only because he harbors certain microorganisms that are associated with his environment, but by lack of socio-intellectual facilities and opportunities. If one agrees with Patry [1] that "when the healthy person is in a state of dynamic balance on all levels of integration — structural, physiologic, biochemical, endocrine, neurologic, and psychologic—he feels adequate in meeting life vicissitudes," one must admit that very few of the rural Negroes born and reared in the southern states become healthy adults.

I list and briefly discuss the four major interrelated handicaps which are interfering with the normal physical, mental, emotional, and social growth and development of rural Negro children in the "cotton belt." The basis

for these opinions comes from the writer's personal observations while in the service of a hospital in Alabama in 1929, and from two special surveys, in which a social epidemiological analysis was made of the findings from a physical, stool and blood examination of 706 rural Negroes in Bullock County, Ala., in 1934,[2] and of 1,975 rural Negroes in Tallahatchie County, Miss., in 1937.

FIRST MAJOR HANDICAP

NON-INFECTIOUS MALNUTRITION

Non-infectious malnutrition is an arbitrary designation for a group of children whose physical findings and social history show that they are below par, but in whom the laboratory examinations and history do not reveal either hookworm, malaria, syphilis, or tuberculosis infection or infestation.

In our Alabama survey, 18 per cent of the children come under this group. In the Delta region of Mississippi only 7 per cent of the children come under this group, but in the hilly sections of the state the percentage was as high as in Alabama. These children were anemic (hemoglobin below 75 per cent), their muscles were flabby, their posture was poor, and many showed pyogenic and pellagric conditions of the skin. Sore eyes were common, and more than 50 per cent of those over 8 years showed some degree of dental caries.

This state of non-infectious malnutrition has been observed for many years by representatives of the various state boards of health, but only rarely does this group of individuals appear in their annual reports as a significant rural health problem. It seems as though the mental and physical state of asthenia among these rural Negro children are accepted as relative normalities for the group. This is not a wholesome attitude.

An analysis of the families from which the children of this group come showed not only environmental lack of sanitation, but a history of a deficient diet for 5 to 7 months out of each year, during which, meal, meat, and molasses were the diet of the old and the young. This is true in spite of the fact that both the climate and the land on which they live are suitable for the growth of different vegetables the year round. One of the great needs for the families of this group is instruction in how to raise and properly store what they need on the land that they till, even at the expense of an acre of cotton more or less.

SECOND MAJOR HANDICAP

SYPHILIS

In metropolitan areas the high incidence of syphilis and tuberculosis generally comes from the same locality and group. However, in our surveys we found that this was not the case in rural areas; the exception being the young adult female.

The rural areas of the southern states, more than at any other time in many decades, are now the weakest link in our public health chain. The health status of the Negro is important to all because he makes up several of these weak links, and when the problem is "syphilis control," he becomes a dominant segment of the chain. The rural Negro, due to no fault of his own, is becoming more and more the reservoir for syphilis in the United States. Three factors seem to play a large part in this increasing prevalence:

1. There are increased opportunities for exposure. Due to better transportation facilities, the rural Negro farmer goes to the small town or village every Saturday. Finding no provision for his wholesome recreation, the small town prostitutes become his means of relaxation, stimulated by the much too common use of alcoholic beverages. The rural Negro does not have proper information concerning venereal disease prophylaxis, becomes infected, and in due time infects other members of his family and community.

2. The aimless town-to-town migration of

the young male adult who with promiscuity and favor spreads the disease along his pathway. These "floating fathers" play an important part in the family history of congenital syphilis and illegitimacy.

3. There is a lack of facilities for the diagnosis, treatment, and follow up; and until recently, there was a definite apathy on the part of the white people in the community toward this condition.

According to physical examinations and standard complement-fixation and precipitation serology tests, 14 per cent of the children under 20 years of age in the Mississippi survey had syphilis. Because of histories of early sexual practices in some, the congenital and acquired cases in this group were not separated. The incidence of those between 20 and 34 years of age was 31 per cent. The number of children tested for syphilis in the Alabama group was too small for analysis, but the percentage of those between 20 and 34 years of age with syphilis was 27 per cent. Even though practically all of the people covered by our survey were poor and of low intelligence, the highest incidence of these syphilitics under 20 years of age come from families where even greater poverty and ignorance exist.

The chances of the children of untreated syphilitic women becoming a community asset are not good. In many cases, the results of conception are abortion, stillbirth, or a syphilitic live baby, weakened by the effects of the *Treponema pallidum* and apt to die very early in life. If, however, he lives to later childhood or even adulthood, there are the syphilitic physical and even mental stigmata to be reckoned with as social problems. In both our Mississippi and Alabama groups of these young syphilitics, in addition to the presence of an anemia and flabby muscles, there were also some of the classical stigmata of eyes, ears, mouth, and nose or bony changes. In addition to the physical handicaps, there were frequent instances of psychobiological disharmony. It was difficult to tell how much of this was due to lack of opportunities for educational development in the whole community and how much to the presence of the *Treponema pallidum* and the physical defects associated with it. We saw one case of a 13 year old congenital syphilitic with juvenile paresis. The problem of gonorrhea in the young children in these communities is very serious. It is augmented by ignorance and many superstitious ideas and practices which make the young virgin girl a target for attacks which are generally not reported. These superstitious practices often result in infection and pregnancy in these children.

THIRD MAJOR HANDICAP

MALARIA

The southern states, from South Carolina to Texas inclusive, show that malaria fever is 4.2 to 6 times as prevalent in Negroes as in whites.[3] In our study in Bullock County, Ala., in 1934,[4] 16 per cent of the Negro children between 5 and 21 years of age showed malaria parasites in their blood upon a single thick blood smear examination, even though acute symptoms were not pronounced. In our Mississippi study in 1937 for the same age group, although only 12 per cent gave positive blood smears, the frequent history of "chills and fever" cured by quinine and the high splenic index lead us to believe that the incidence of malaria is greater in the Delta of Mississippi than in Bullock County, Ala.

The children in this group were generally anemic, asthenic, and lethargic. This is easily understood when one realizes the damage to the reticuloendothelial system resulting from the deposition of pigment coming from the degenerating plasmodia and red blood corpuscles, the toxin given off by the disintegrating plasmodia, and the sensi-

tizing effect of this toxin on the red blood corpuscles. The resulting fragility predisposes these red blood corpuscles to mechanical and chemical damage. The anemia which follows is a big factor as a handicap of the growing child. In families where the malaria cases were found, only 1 out of every 47 dwellings was properly screened.

FOURTH MAJOR HANDICAP
HOOKWORM INFESTATION

Where repeated stool examinations were made, the incidence of hookworm infestation in children between the ages of 9 and 14 years (the age of greatest prevalence) may be as high as 20 per cent. In Bullock County, Ala., we found that 11.7 per cent of the children of 9 to 14 years, showed hookworm ova by a single stool examination. The incidence was higher in boys than in girls. In all positive cases, there was a history of wading or swimming in ponds or creeks. The houses in general did not have sanitary privies or they were not properly used. The incidence of hookworm in the Delta region of Mississippi is much lower than in Alabama or the hills of Mississippi.

Very few of the Negro children who showed ova in their stools had any severe symptoms. They were, however, anemic (some with hemoglobin as low as 40 per cent) and asthenic. Many had sores on their lower extremities. The pathological anemia seems to be the most significant finding. This, we believe, is due to the action of the adult hookworm which attaches itself to the intestinal mucosa after its larval migration and moulting. Not only is there a mechanical loss of blood with the corresponding depletion of iron and calcium, but a definite anticoagulant toxic product is given off by the hookworm which affects the hematopoietic system.

In hookworm infection, as in some of the other infections, the finding of the organism does not explain all of the symptoms of the disease. We know that if a child had an adequate diet containing inorganic iron, liver, or milk, he would not show the marked symptom of hookworm disease that one occasionally sees. The solution to this problem is greater than merely rendering the child temporarily free from the nematode.

SOME GENERAL UNDERLYING FACTORS

The chief factors responsible for the conditions listed here are ignorance and poverty, to which must be added inadequate social agencies to alleviate the conditions in this group. In the 1937 annual report of the American Social Hygiene Association,[5] many agencies were listed as participating in the association's programs in various communities. In the Delta regions of the southern states, where the health problems of the rural Negro in regard to certain diseases appear worst, the agencies listed in the association reports [5] are almost nonexistent or nonfunctional. Only in a few instances do the official health departments or the boards of education consider the expenditure and activities for promotion of the normal growth and development of the rural Negro child in an unbiased light. The Negro has no race representation and generally gets what he does by a gesture of humanitarianism, which is a late development in the social evolution of man.

In all communities, three structural agencies are present: the home, school, and church. Even though they fall short of doing their share in preparing the children of these rural communities for a more positive participation in the advancement of worth while American life, we must look to them for the solution of many of these problems. In the homes, the parents are frequently more ignorant along lines of

health than the children whom they should guide. In the church, the leadership is frequently untrained, or so much obsessed with fanatic denominationalism that little thought is given to the local problems of hygiene and sanitation and their effects on the normal growth and development of the children. Of all the agencies, the rural school teacher, although underpaid and poorly trained, seems to be the key to the solution for the present.

SUGGESTIONS FOR PRACTICAL IMPROVEMENTS

Specially trained teachers with some originality, flexible enough to make an adjustment and dynamic enough to initiate and supervise community health projects, could correct most of the conditions listed. This "key" person should be well paid and encouraged to stay in a county and work on the problems at hand with some assurance that his efforts will be repaid with sufficient compensation and security. The public health nurse, who is the backbone of any rural public health program, should be closely associated with this "key" person in the school so that small health projects may be integrated into the activities of the schools. Under the supervision and advice of the state and county boards of health and education offices, the teacher, the nurse, and the county farm agent could eradicate in a few years many of the factors responsible for the conditions mentioned.

Diversified farming should take the lead, and there should be a well integrated and not too radical program of information concerning venereal disease control. When dealing with ignorant people of many years of prudery and with unintelligent church officials, extreme tact is necessary in order to get their coöperation in the control of a disease the solution of which they have preached only morality. The screening of the home, and the building and use of sanitary privies should be a part of the community projects. The teacher and others associated with him in this project can do much to set examples by proper sanitation of the school building and grounds, urging more sanitary methods of handling food and drinking water, and the washing of hands after going to the toilet. The young people will take these practices back to their homes, observe them at picnics, churches, and festivities, and thus influence the community in which they live. There is a great need for leadership of an intelligent character.

SUMMARY

According to recent surveys made in Bullock County, Ala., and Tallahatchie County, Miss., the most common finding in Negro children in rural districts in the South is anemia. This anemia is sufficient to interfere with the normal growth and development, and is due in general to either a dietary inadequacy or to the effects of the three important types of infection; namely, syphilis, malaria, and hookworm. The chief factors responsible for these conditions are ignorance and poverty. These can best be corrected under the present set-up by the use of an efficient local school teacher as the "key" person under the supervision of the official agencies, and with the coöperation of the public health nurse and the farm demonstration agent.

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A Critical Discussion of Some Methods and Standards for Certified Milk*

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IN the title of this paper, the word critical is used in its classical sense, meaning an analytical or judicial discussion, a critique. The discussion is confined to *some* of the methods and standards for the production of certified milk which in some respects may be at variance with the thought, organization, and administrative procedure of health departments and the standard methods employed in most milk control laboratories. I hope to show the reasons for regarding the supervision of certified milk production as a special problem requiring special methods and standards. In doing so, I shall discuss (1) certain features of medical milk commission control, (2) the bacteriological methods and standards for certified milk, and (3) pasteurization of certified milk.

There is not sufficient time to go into the details of stable practice, care of equipment, construction of buildings and equipment, etc., important as are some of these details. However, it is a fact, as you know, that a conscientious, capable dairyman may produce a good product with rather simple equipment and in rather unattractive surroundings; whereas, with a fine herd, excellent equipment, and attractive surroundings, an unreliable, slipshod or incapable dairyman may produce a poor product. The safety and quality of the milk are the objectives; the other factors are means to this end. I would, therefore, rate the qualifications of the dairyman as of chief importance in the production of certified milk.

The Medical Milk Commission is usually appointed by a state, county, or city medical society. It has no official standing except such as may be recognized in the community which it serves. Because of its unofficial standing, the commission enjoys the privilege of private contract. It may and does refuse to enter into a contract with a dairyman whom it regards as lacking "proper interest and intentions" even though he may have suitable livestock and equipment for the production of certified milk. It would be more difficult for public health officials to take this attitude. Composed, as it is, mostly of physicians, the medical milk commission is particularly well qualified to exercise medical supervision of dairy employees which it does by providing a Commission physician who visits the certified milk farm each week, more often if necessary, and who subjects every new employee to a thorough

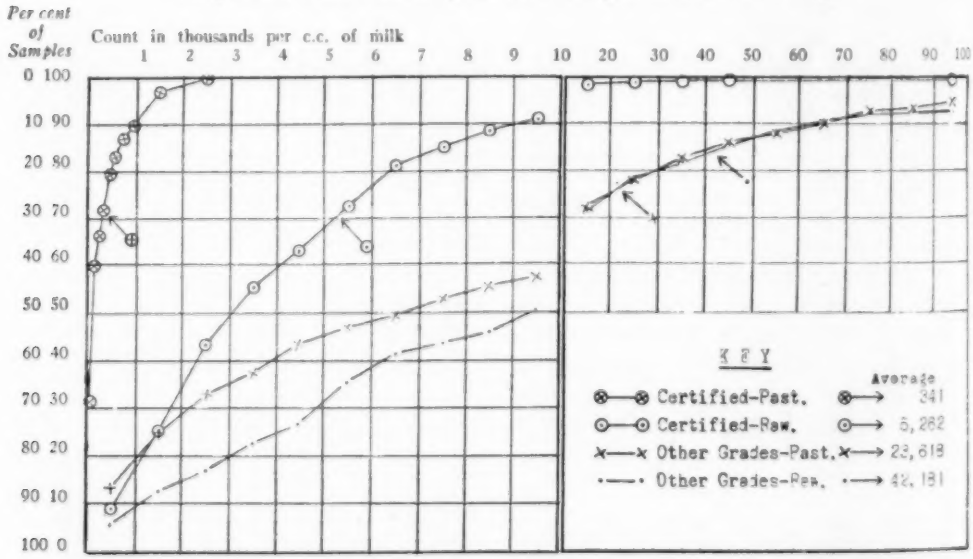
* Read before the Laboratory Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 8, 1937.

medical examination before he is allowed to begin work, and periodically thereafter. It is hardly reasonable to expect a health department to render this service to such a small minority of producers as are engaged in the production of certified milk.

The bacteriological standards for certified milk require that it "shall contain not more than 10,000 bacteria per c.c." when delivered to the consumer and that certified milk-pasteurized shall contain "not more than 500 bacteria per c.c.," as determined by plate counts in a special agar, referred to as A.A.M.M.C. agar, which has been found to yield considerably higher counts than does the standard nutrient agar of the A.P.H.A., counts of the same magnitude as may be obtained with the "tryptone glucose skim milk agar" recently advocated by Breed and his associates. The improved medium not only gives a bacterial count that is more nearly true but its adoption serves, in effect, to raise the standard for certified milk. During the first year of its use the Committee on Methods and Standards of the American Association of Medical Milk Commissions has compiled data, involving over 1,300 milk samples, from laboratories in 25 cities using this medium. These results are presented in Chart I. In this chart it will be noted that in the improved agar 91 per cent of the samples of unpasteurized certified milk had counts below 10,000 per c.c. We may call this a "compliance rating of 91 per cent." The compliance rating for certified milk-pasteurized, with a required maximum count of 500 per c.c., was 80 per cent. It is obviously impossible to compute a compliance rating for counts of other grades of milk since the legal requirements differ in various localities; but if we should assume a legal maximum count of 30,000 per c.c., the compliance rating of other grades of pasteurized or raw milk would be 80 per cent, and in order to have a rating of 91 per cent, the legal requirement would have to be

CHART I

Comparative Plate Counts of All Milk Samples in A.A.M.M.C. Agar



Per cent of samples on the ordinate below the curve had lower counts than shown on the abscissa
Per cent of samples on the ordinate above the curve had higher counts than shown on the abscissa

TABLE I

Comparison of Plate Counts of Milk from Two Different Producers.

Milk 1		*Milk 2*	
600		4,000	
50,000		7,000	
1,500		5,000	
2,000		4,500	
100,000		8,000	
8,000		5,500	
4,000		3,800	
6,000		3,500	
500		6,000	
13,000		5,250	
Log. Average	5,070	Log. Average	5,080
Arith. Average	18,560	Arith. Average	5,255
Uniformity Rating	27%	Uniformity Rating	96%

If the standard for the above milks was 10,000 colonies per c.c., Milk 1 would have a Compliance Rating of 70% and Milk 2, 100%.

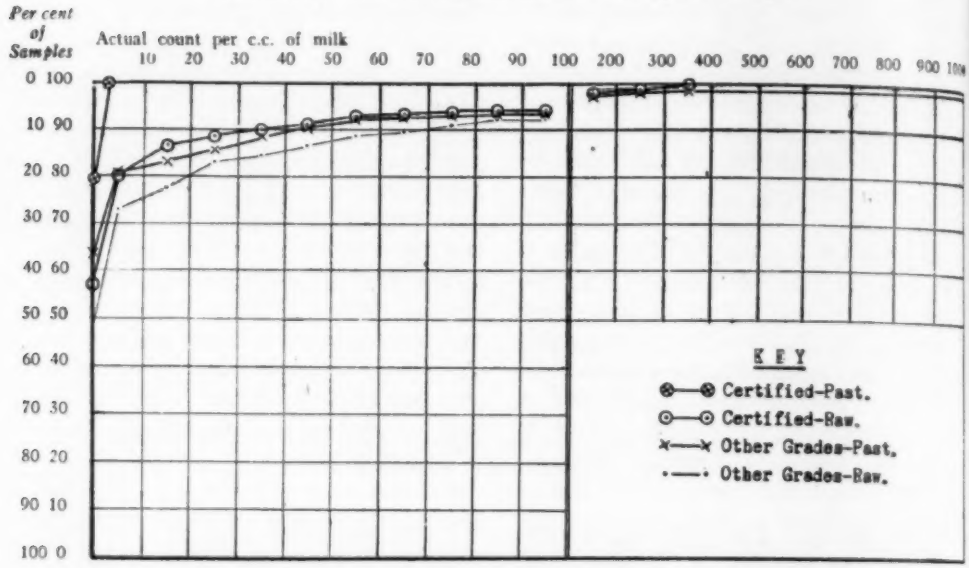
70,000 per c.c. The arithmetical average of the samples of unpasteurized certified milk was 5,262 per c.c. The logarithmic average was 3,425 per c.c. The judging of milk by averages is not recognized by the Methods and Standards for Certified Milk since it is required that the milk shall be of uniformly low count rather than of average low count. However, by computing a ratio between the logarithmic average and the arithmetical average, one may obtain a "uniformity rating" of the product. This may be illustrated by the examples given in Table I. The logarithmic average of the two milks are approximately the same although the arithmetical average of Milk 1 is more than three times that of Milk 2. If we had a perfectly uniform milk the logarithmic average would be the same as the arithmetical average and the uniformity rating would be 1.0. In my estimation, the logarithmic average serves too effectively to minimize and conceal the faults of Milk 1. On the other hand, it is the opinion of some that the arithmetical average imposes undue penalties for occasional high counts.

I am aware that there is a growing tendency in milk control work not to publicize actual milk counts or averages. However, if the uniformity ratings and the compliance ratings of these milks are compared, a fairly accurate idea of their bacteriological quality is obtained provided the basis of the compliance rating is known. Computed by this method, the uniformity rating of the samples of certified milk-raw, shown in Chart I is 66 per cent; that of certified milk-pasteurized, 58 per cent; other grades of pasteurized milk, 31 per cent; other grades of raw milk, 25 per cent. With a knowledge of the required bacterial count, the compliance rating, and the uniformity rating, one obtains more nearly complete information of the bacteriological quality of the milk than is revealed by either the arithmetical or the logarithmic average. The reductase test is not suitable for milk of low bacterial count.

The Methods and Standards require that certified milk-raw "shall contain fewer than 10 organisms of the coli group (Escherichia or Aerobacter) per c.c. of milk" and state that "properly pasteurized milk should contain no

CHART II

Coli Group Counts of Various Milks in Desoxycholate Agar



Per cent of samples on the ordinate below the curve had lower counts than shown on the abscissa
Per cent of samples on the ordinate above the curve had higher counts than shown on the abscissa

organisms of the coli-aerogenes group." There may be some question as to the usefulness or significance of the coli-group count for raw milk; since these organisms are plentiful in the stable environment (cow manure and field dust) and grow rapidly in milk which may not be properly refrigerated. They therefore do not necessarily indicate contamination from human sources. Their absence, or presence in very small numbers, however, does indicate cleanly milking and proper milk handling to a more exact degree than does the total bacterial count. The coli group count is being found very useful in the detection of careless milkers and sometimes other specific sources of contamination. Obtaining the coli group count is made very simple by the plating of 1 c.c. of milk in desoxycholate agar. In Chart II are presented the coli group counts of milk from the same sources as illustrated in Chart I. It is noted that the compliance rating for coli group counts of certified milk-raw is 80 per cent (fewer than 10 organisms per c.c.). The compliance rating for certified milk-pasteurized is also 80 per cent (none per c.c.), the highest count being 3 per c.c. For purposes of comparison only, under the same standards, other grades of raw milk examined would rate 73 per cent (fewer than 10 organisms per c.c.) and other grades of pasteurized milk, 64 per cent (none per c.c.). The last figure is in close agreement with the results reported by Yale [1] who found over 30 per cent of samples of bottled pasteurized milk and over 16 per cent of process samples taken at pasteurizing plants to contain coliform organisms. It is my opinion that milk control laboratories should give more attention to the coli group counts of all pasteurized milk and that their presence indicates either improper pasteurization or contamination of the milk after pasteurization.

If certified milk is pasteurized, it is required by Methods and Standards

that it shall be pasteurized and bottled on the farm where it is produced and that the pasteurizing equipment shall not be used for the pasteurization of any other grade of milk. Since these requirements may appear to be at variance with public health regulations for the pasteurization of other grades of milk, I wish to present the reasons for them, from the viewpoint of the American Association of Medical Milk Commissions.

It is regarded as necessary not only to maintain the identity of certified milk as distinguished from other grades of milk but to maintain the identity of the milk from each individual farm. This would be found to be of enormous public health value if pathogenic organisms should gain entrance to a certified milk supply. Not only would it limit the spread of an epidemic but it would enable the public health officials to trace the source of the epidemic almost immediately. It is desirable to fix the responsibility for the safety and quality of every bottle of certified milk onto the individual producer rather than to divide this responsibility with pasteurizing and bottling plants within the city. It is not desirable that certified milk bottle caps should be available in plants where other grades of milk are bottled.

Certified milk should not be pasteurized and bottled with equipment used for any other grade of milk. Even though it may be proposed to pasteurize certified milk in clean, sterilized equipment ahead of any other milk that is to be pasteurized, it is doubtful whether this equipment can be guaranteed to be perfectly sterilized every day. It is true that it may be sterilized just as well as the equipment on the certified milk farm, but it must be considered that equipment on a certified milk farm is used for no other grade of milk at any time and that other grades of raw milk are not safe as is indicated by the occurrence of over 380 epidemics traced to such milk during the past 10 years, whereas only 17 were traced to supposedly pasteurized milk, and none to certified milk. Many of the producers of certified milk are relatively small producers shipping small amounts of milk to a number of distributing points. It is doubtful whether the large city pasteurizing and bottling plant would find it convenient or profitable to postpone the pasteurization of the large volume of other grades of milk until the small volume of certified milk had been run through the equipment. What might happen if the arrival of the certified milk were delayed?

It is contended that regulations, such as pasteurization within the city, desirable for other grades of mixed milk, would tend to lessen the safety and lose the identity of certified milk which there is every reason to believe is a safe milk before it is pasteurized. Certified milk-pasteurized is required to be certified milk before it is pasteurized. Unfortunately, the effort to maintain it so is more difficult in those communities which have sought to improve the milk supply by requiring that all milk, including certified, shall be pasteurized. Referring back to Chart I, it is noted that the compliance rating of the samples of certified milk-pasteurized examined was 80 per cent. It is rather suggestive to note that all but one of the samples with counts above 500 per c.c. were reported from communities where all milk is required to be pasteurized, and, referring to Chart II, that all of the samples containing coli group organisms were also from such communities. It is feared that the knowledge that all the milk is to be pasteurized leads to lack of interest in clean safe milk production. The best certified milk-pasteurized is to be found where some of the milk is sold as certified milk-raw.

For these and other reasons certified milk should be regarded as a special

problem. All milk should not be regarded simply as "raw" or "pasteurized." Even though the volume of certified milk may be relatively small, it is worth while to have in any community a product which shows how good milk can be. Such a product should be used to exert an influence on the entire industry and to strengthen the hands of milk control officials. The Methods and Standards for the Production of Certified Milk are to be "regarded as minimal" and may be augmented by local requirements. If, at any time, a certified milk is regarded as below standard, health authorities should report it to the American Association of Medical Milk Commissions, Inc., 1265 Broadway, New York, N. Y. Certified Milk should be a coöperative enterprise among producers, milk commissions, and health authorities.

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Rheumatism

IN recent years we have almost removed from the list of killing diseases enteric fever and smallpox, and the rôle of Public Enemy No. 1 seems now to be given properly to rheumatism—to which at least one-sixth of our expenditure under National Health Insurance is attributable.

Fortunately the study of rheumatism is becoming accepted as a world problem, and the obscure origin of this disease is being gradually clarified—though we are not yet able to explain such problems as why rheumatoid arthritis afflicts six times as many women as men between the ages of 25 and 34.—Presidential Address, Blackpool Congress, May, 1938. *J. Roy. Inst. Pub. Health & Hyg.*, July, 1938.

A More Effective School Health Program*

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SCHOOL health supervision as it exists today is a logical but inhibited outgrowth of the original effort known as school medical inspection, which was designed primarily to control contagion. The latter name still clings to it, despite the fact that in many centers, particularly in Canada, no physician is associated with the service. Its development, like other types of community welfare service, was forced, in that new fields of effort were allocated to those associated with the plan without permitting them an opportunity for the consolidation of ground already won. By this, I mean that, while a useful contribution to the control of communicable disease, particularly such contagious conditions as pediculosis, scabies, impetigo, etc., was made, the status of the original program was never more than that of a logical auxiliary to an acceptable community health service.

Imposed upon such a foundation the added responsibility entailed in the regular examination of the presumably healthy child increased the instability of this rather loosely built structure. The lack of special training and enthusiasm on the part of the staff resulted on occasion in administrative indigestion and thinly veiled conflict with the parties most concerned in matters affecting the health of children, namely, the parents and the medical profession. The program has also possibly suffered from the attitude of some of those propagandists who sponsored its adoption during the days of its rapid extension on this continent. Convinced of its merit, in their desire to impress municipal and school authorities with its value, they implied finality as to procedure and exaggerated its potentialities.

Referring briefly to its original accomplishments in the field of communicable disease control, we are inclined to wonder just what were the conditions which made possible so much in the way of achievement, having in mind the limited qualifications of the staff and the methods adopted. Actually, much of the success attained was due to the failure on the part of both the public and the medical profession to manifest any serious concern with the official requirements in the matter of controlling the spread of contagion. These were the days when the interest of the family physician in this field was confined to the reporting of smallpox and diphtheria and when absence from school for scabies or ringworm might, if there was no parental concern for the education of the affected offspring, extend to the best part of the school term.

Criticism has been leveled at the methods designed to achieve the first of the commonly recited objectives.

* Read before the Child Hygiene Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 6, 1937.

In the early days of the service when all of the emphasis was placed on the control of communicable disease, the accepted procedure was to have all children showing evidence of suspected contagion referred to the school physician, who visited each school in his district daily. Those who were unable to present a convincing excuse for absence were also likely to be included in this group. When the nurse became an accepted member of the staff, routine classroom inspection was added to the list of endorsed procedures. Then followed the post-holiday rapid inspection and the special daily review of affected classrooms or schools when certain diseases were epidemic in the community. Home visiting by the nurse and physician of suspected absentees was at first a fruitful source of investigation. In an effort to insure the interest of teachers, the daily readmission of all returning absentees was ultimately resorted to. Children who had been absent for a minimum of 2 days were sent to the appropriate office upon the arrival of the school nurse or physician. The fact that all too often they had been allowed to mingle freely for from 1 to 3 hours with the other pupils in the classroom was condoned when it could not be controlled.

Sound, statistical support on behalf of this branch of the service is not readily obtained; neither is it possible to refute statistically its value. Going over old reports I find reference to the statement that 40–50 per cent of the cases of communicable disease reported in certain urban centers were reported by the school health staff and that many of these cases were found in the classroom. Presuming this to be an approximation of what may have been true, and comparing it with figures for the Province of Ontario, we find that the percentage has fallen to the point where one might be justified in questioning the necessity for continuing to include this field of effort among the objectives of the service. The same records would appear to imply that the more effective the municipal health organization, the smaller was the percentage of pupils found in school with evidence of communicable illness. Despite the previously referred to implication, however, there is evidence to show that the control of communicable disease still has a place among the objectives set by the advocates of school health supervision.

While one may comment critically on the methods designed to limit the spread of contagious illness, the substantial contribution made by the school authorities to the success of our efforts at active immunization should not go unnoticed. The aid extended, either directly or indirectly, to the health authorities in this constructive effort, has made possible much of the success achieved. Further, the fact that public opinion has been favorably influenced on behalf of such control measures as are effective, must also be added to the non-tangible good which has resulted from this service.

But let us pursue our review of the objectives and their approximation:

Prior to the time when the responsibility for insuring the discovery and correction of present and potential defects was assumed by the school health staff, the program had been rather hesitatingly accepted by the community. It was apparently considered as a service more or less complementary to that carried on by those official agencies which had previously preëmpted the prerogatives of the public in the matter of the control of communicable forms of illness. Now with this added function, it took on an aspect of municipal paternalism which presumed further to abrogate from the parent the formerly accepted privilege of deciding as to the health needs of his offspring. This

second objective further appeared to be a subtle invasion of the prescribed field heretofore allocated to the family physician. In view of this fact, there was no avid acceptance of the service by either the profession or the public. Even the interested parent was at first lacking in enthusiasm for such a program.

The original presumption that parents would welcome the opportunity of being informed as to the health needs of their children, and following the receipt of such information would take the necessary steps to insure prompt correction of unsatisfactory conditions reported, was found to be applicable to only a limited number, variously estimated as being between 25 and 40 per cent.

The method of examination originally adopted was not designed to placate either parental or professional prejudice and the service suffered some loss of prestige, if it ever had any to lose. The continued questioning of the judgment of the school medical officer by both parent and practitioner led to some modification of the rather casual type of examination originally in effect. That these modifications have not always accomplished the hoped-for result is evident to anyone who carefully reviews the data of some well recorded service.

There have been a variety of methods adopted since the day of the rapid mass examination. In some centers, the examination is as complete as it is possible to make it, with the parent invited to be present; in others, the examination lacks only the presence of the parent. Again, in others, a team of physicians with special qualifications carry out the actual examination after the children have been screened by a nurse or teacher. Again, in some communities, the entire program is in the hands of nurses, supposedly carefully chosen and specially trained for such service. The variety in method also extends on occasion to the number of examinations to which the child is asked to submit and the stage in his school career in which the examination is to be carried out. In some centers, he is examined on admission and again prior to graduation; in some instances, 3 examinations are made in the school life of the child; while in others, the responsible authorities have been influenced by the advocates of periodic physical examination to the point where they have adopted the plan of annually examining the school population.

It is not my thought that this diversity of method should be considered critically or to imply confusion where none exists, for I realize fully the difficulties which have periodically confronted those responsible for the establishment and conduct of this essential service. I wish merely to say that this multiplicity of method has added to the perplexities of those anxious to insure the extension of school health supervision.

The further expansion of the original program to include a directional interest in all matters pertaining either directly or indirectly to the present or future well-being of the school age child, which objective included in some centers the conduct by the health personnel of the health teaching program, added nothing to the list of supporters of the service. Neither did it tend to lessen the confusion inherent in such a state of affairs, for here we have a service being compelled to expand its program without the opportunity to "mop up" as it went along. To its own critics, and no one has been more critical of its limitations than those engaged administratively in its conduct, two shortcomings stand out:

First, the fact that we have been unable to secure from organized medicine the recognition that the service

justly warrants. This failure can be rightly laid to our own unwillingness to find the proper place for the general practitioner as a co-partner in the scheme. Second, our evident inability to obtain the appropriate correction for physical defects found or suspected.

While the second of these shortcomings looms superficially as the more significant, the first probably in any critical analysis of cause and effect would be considered the more important. However, our concern at the moment is our inability to demonstrate in a tangible fashion the result of our efforts. Innumerable children are found with evidence of some of the commoner physical defects; the parents are informed of the presence of such defects and yet correction is perennially procrastinated or the recommendation flatly ignored.

We have already referred to the apparent unsoundness of the original premise upon which the service was established, namely, that all parents are sufficiently interested in the physical status of their children to accept readily the suggestion that professional advice and treatment are essential. Whether the statistical evidence warrants us in an acceptance of the presumption that the previously mentioned failure to seek medical advice following the receipt of the generously distributed notification of defect is due to lack of interest, whether it is due to some defence reaction, or whether there is some other more acceptable explanation for the condition noted, is to my mind a problem, the solution of which might well be left to the psychologist experienced in evaluating motivating influences. I might add here, however, that while the inability of the family to pay for treatment is a valid reason in a percentage of cases, the number who give this as a justification for inaction is not, on careful inquiry, so great as some of you may presume.

The challenging fact which confronts those of us who are permitted an opportunity to review our service in terms of its accomplishments and limitations is that only 30–40 per cent of conditions (other than dental defects) stated by the school physician to warrant treatment, receive such treatment within 2 years of their discovery. May I state here that I am fully appreciative of the excellent work done by the New York Study Group in the inquiry into the factors influencing this condition, and urge that the findings of the group be carefully reviewed in terms of their possible application to your local problem.*

Without any further assumption of the magisterial prerogative of being wise in retrospect, I wish to record for your critical comment a suggested modification of the plan which has been for many years in effect in the majority of those centers in Ontario in which a physician is associated with the service. In evolving this scheme, we have kept in mind the following presumptive premises, both of which have been referred to in the rather protracted preface, namely, that our failure to include the family physician in our program has contributed definitely to the limitations of our achievement, and that some of our difficulty is due to our evident unwillingness to limit the term "notifiable defect" to those physical or mental abnormalities, the patency of which is such that even the most unconcerned physician is likely to subscribe to their significance.

We suggest that the school health program make provision for the early examination of all beginners; that this examination be as thorough as it is possible to make it, preferably with the parent present; that following examination, the child be placed in one of

* *Physical Defects—The Pathway to Correction*, 1934. Obtainable from A.P.H.A. Book Service.

three categories, labelled for convenience, groups A, B, and C. Group A to include all children found to be presumably well; group B to include those children who, in the estimation of the examiner show some signs of below normal well-being but not displaying an evident physical defect; group C to include all children requiring early medical advice or treatment. The child placed in Group A, as an individual ceases to be a concern of the school medical officer as long as he remains in this category. He would, however, automatically drop into Group B following his having suffered from any accepted type of acute illness. He would then appear at a convenient time for reëxamination by the physician and his category would be subject to revision.

In the event of the child being placed in group B, the assistance of nurse and teacher is sought in an effort to uncover information which might supplement the findings of the examining medical officer. Such information might rightly include the child's dietary and other health habits; his reaction toward work and play; the scope of his extra-curricular activities; and the extent and considered seriousness of those previous illnesses reported by the parent at the time of examination.

In order to avoid confusion, it is recommended that the length of the period of observation be fixed, say at 3 months, and that the physician note on a suitable form, for the guidance of the nurse, those particular points in respect to which he wishes added information.

The nurse is expected to see that the child presents himself for reëxamination at the expiration of the period of observation; at which time, in the light of the knowledge already on hand and the additional information secured, a further attempt is made to estimate the present or future physical status of the child. He might rightly be continued for a further fixed period of observation in group B; placed in group C; or now stated to belong in group A.

Some such procedure as the above should lessen the possibility of the school health staff committing itself to a premature diagnosis, and places the physician in a more acceptable position in the event of the family practitioner disagreeing as to the clinical accuracy of his findings and recommendations. Further, during the period of observation, the nursing staff is permitted an opportunity to create interest where necessary, in both parent and teacher, in the health of the individual child.

Criticism is levelled at the practicability of any plan of informing the family physician of the school medical officer's findings, without resorting to the dubious method of sending it through the child or parent. Despite such criticism, I do not believe that we should ignore the desirability of establishing an ethical contact between the school health staff and the physician; such contact to be comparable to that associated with our other professional relations with our fellow practitioners. While it is accepted that there are a considerable number of families in any community with no fixed affiliation with any physician, I do not believe that the number of these having children of school age is as large as has been estimated; probably not more than 20–25 per cent are in this class. Those in the lower wage earning group, who will be more than likely dependent for any necessary treatment on the clinic facilities of the community, might rightly be excepted. Granted that this number might even be higher than suggested, I still believe that much good would result from a serious attempt to inform the physician directly of the school physician's findings and

recommendations, since he is the agency responsible for the suggested treatment. It is therefore urged that the school medical officer, at the time of examination—using an acceptable type of form—tell the physician who has been named by the family as the doctor of their choice, exactly what he has found and the implications which he has drawn from such findings. This statement should be mailed promptly and should be as personal as is possible to make it. In those cases in which the child has been under observation and this fact recorded, the position of the school medical officer is materially strengthened. Not only should such a practice encourage more accurate deductions from physical findings by the school medical officer, but it should go a long way to eliminate any feeling of professional irritation upon the part of the general practitioner. Certainly the physician who has before him an intelligent statement from a medical confrere is not likely to find himself in a position of embarrassment, when a parent, having accepted the suggestions of the school medical officer, presents himself or herself at his office with the child concerned.

The physician, following the receipt of the school medical officer's report, may adopt one of three attitudes: he may be sufficiently close to the family to justify his contacting them in respect to the matter without delay; or his relationship may not be sufficiently well established to permit him to do more than wait in anticipation of the parent's acceptance of the advice offered by the school medical officer; or he may ignore the communication entirely. Irrespective of which of these attitudes he adopts, certainly those responsible for the administration of this municipally subsidized service will have the added satisfaction of having offered this tangible evidence of a desire to coöperate with those of the profession who are engaged largely in the therapeutic side of medicine.

Reference has already been made to the diversity of methods adopted in the matter of so called "follow up." I am strongly of the opinion that in many instances our efforts have been psychologically unsound. In many centers in Ontario, the common practice is to permit the parent who does not proceed at once to implement the school physician's recommendations, a limited period of time in which to initiate treatment. Following the lapse of this period, the nurse is asked to visit the home and, further, encouraged to continue these visits until either the parent or nurse becomes discouraged. The result of this practice is that the parent, caught by the representative of an official agency in this suggested dereliction of his or her duty, develops an attitude of non-coöperation or open resistance to our persuasive efforts and the end we seek becomes unattainable through much striving. It is recommended, therefore, that after an appropriate interval has elapsed, the parent be sent through the mail a tactfully worded communication drawing his or her attention to the desirability of accepting the advice offered at the time of the original communication; and that these letters be regularly forwarded until some concrete evidence of parental interest is exhibited; that there be no direct contact between the parent and the school health staff unless such contact is sought by the parent, until this more indirect method of approach has been found ineffective.

While none of these suggestions may be convincing, either in terms of their originality or their practicability, I do ask that they receive such consideration as they would appear to merit, in that they are brought forward after many years of experience with the procedures usually prescribed.

Cultural Methods for the Detection of Typhoid Carriers*

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IN communities where the sanitation is admirable and the food and water supplies receive the fullest attention of the health authorities, typhoid fever continues to be a menace. Although residents of well protected urban centers occasionally contract this disease in some remote rural region, there are sporadic cases and occasional outbreaks which cannot be attributed to such outside sources. They are of endogenous origin, in most instances traceable to undetected carriers, who are the principal obstacles to the complete control of typhoid fever within the community. Their detection requires the constant vigilance of the epidemiologist, who must receive efficient aid from the laboratory.

There has been a long felt need in public health laboratories of a method or procedure which would facilitate the isolation of the typhoid-dysentery group from feces. A medium that would inhibit the growth of the coliform bacteria while permitting the development of the colonies of the typhoid bacilli would be a distinct contribution.

Approximately 18 months ago, our attention was drawn to a dehydrated medium which seemed to possess certain impressive qualities, the Wilson and Blair[1] bismuth sulphite agar, slightly modified by the Difco Laboratories. This medium, when ready for use, consists of:

	Per cent
Peptone	1.0
Beef Extract	0.5
Dextrose	0.5
Disodium phosphate	0.1
Ferrous sulphate	0.03
Bismuth sulphite indicator	0.8
Brilliant Green	0.0025
Agar	2.0

Growth of colon bacilli is greatly inhibited by bismuth sulphite agar but it is doubtful that they are killed, since it has been possible to obtain growth after transplanting to other media. The inhibition of the colon bacilli allows the typhoid colonies to make their appearance without hindrance. Such colonies are black and flat and, when typical, surrounded by zones of a glistening metallic character confined to the surface of the medium. Although good colonies may be observed after incubation for 24 hours, their appearance is most typical after 48 hours.

The first attempt to evaluate the merits of the bismuth sulphite agar as a medium to be used routinely was made by planting the fecal specimen on Endo agar and on the bismuth agar simultaneously. Cultures on both

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were made by streaking out loopful amounts of the fecal emulsion on the respective plates. The emulsion was prepared by mixing approximately 5 gm. of the feces with 10 c.c. of physiological salt solution, allowing it to stand for about 1 hour and using the supernatant portion for planting.

In this first comparison, 100 consecutive cultures were made, with results almost alike; but a few discrepancies suggested that not all of the positive cultures possible were being obtained. By this method of planting, the bismuth sulphite agar was found not to be superior to the Endo agar. The colon-inhibiting property of the bismuth sulphite agar was so striking that work was carried on, streaking bismuth medium with the feces directly, while the Endo agar continued to be streaked in the usual manner. By this method, the bismuth agar was found to be approximately 16 per cent more efficient than the Endo agar as judged by the increased number of positive cultures that resulted.

Believing that this increased efficiency of the bismuth sulphite agar was to be accounted for by the use of the more concentrated fecal substance for the cultures, another series of observations was made, which forms the basis of our present report. Three procedures were followed in planting the fecal material of each specimen. Each culture consisted of 3 plates. Endo agar was streaked with a loopful of the fecal emulsion, a bismuth sulphite agar plate was smeared with undiluted feces by means of a cotton swab, and the third plate was prepared by pouring 15 c.c. of the melted bismuth sulphite agar at about 40° C. over 5 c.c. of the fecal emulsion. All plates were examined for typical colonies after 24 hours, which were then transplanted to Krumwiede's triple sugar agar. The bismuth sulphite agar plates were incubated for an additional 24 hours if no colonies were visible at the end of the first incubation. Whenever the triple sugar reactions were in support of the typhoid-dysentery group, suspensions of the organisms were examined for motility. The final step for establishing the identity of the isolated organisms was agglutination with typhoid and paratyphoid antisera. Only dilutions in titers above 1 to 300 were considered diagnostic. However, most of the reactions were positive in dilutions of 1 to 1,000.

The manner of evaluating the 3 procedures is illustrated in Figure 1. Each symbol is composed of letters appearing in the names arbitrarily chosen for respective procedures, as, E = Endo agar, S = bismuth sulphite agar streaked with feces, P = bismuth sulphite agar poured over emulsion, etc.

In 1 year, the laboratory of the Detroit Department of Health received 2,273 specimens to be examined for the presence of intestinal pathogens, of which 64 were urine, and 2,209 feces. Each specimen was classified according to its source and was listed as coming from a case, a contact, or from a food handler. In the group from cases are included those submitted for diagnosis as well as those for release from hospital or home. In several instances, the case release cultures numbered 20 or more, while the average number of cultures examined for cases was 8. The specimens from contacts were received largely on the advice of the epidemiologist to determine if passive carriers were present in the homes of those suffering from an acute intestinal disease. Occasionally a chronic carrier was discovered by this procedure. Listed as food handlers are those persons who, upon epidemiological investigation prior to receiving permission to engage in the preparation or distribution of food for public consumption,

FIGURE I

Procedure Followed to Evaluate Efficiency of Methods

Endo Agar Plate Streaked	*Bismuth Sulphite Agar Plate Streaked*	*Bismuth Sulphite Agar Plate Poured*	*Evaluating Symbol*
⊕	⊕	⊕	E.S.P.
⊕	⊕	⊖	E.S.
⊕	⊖	⊕	E.P.
⊕	⊖	⊖	E.
⊖	⊖	⊕	P.
⊖	⊕	⊕	S.P.
⊖	⊕	⊖	S.

were suspected of being chronic carriers because of a history of enteric infection.

Table I is a summary of the number of specimens examined for organisms of the typhoid-dysentery group—the total number positive applies only to the finding of typhoid or paratyphoid bacilli. Dysentery bacilli were not considered for purposes of this comparison. Of the 452 positive cultures, 5 showed the presence of *Salmonella schottmülleri*, 2 were positive for *Salmonella paratyphi;* and 2 for both *Salmonelli schottmülleri* and *Salmonella paratyphi.* Reference is also made to initial positive cultures, a group compiled on the basis of the examination made of each person's specimen received for the first time, irrespective of the number of subsequent examinations that were made. The total of 107 of such specimens is an index to the number of carriers of the typhoid bacilli according to class. It may be roughly estimated that in Detroit during this study there were 25 cases; 58 contact carriers, either active or passive; 24 carriers who, because of their occupations, would endanger the health of some persons if they were not detected by laboratory means.

The total and initial positive cul-

TABLE I

Specimens of Feces and Urine Examined for Organisms of Typhoid Group

	Number Examined	*Number Positive*	*Number Initial Positive Cultures*
Cases	895	328	25
Contacts	810	75	58
Food Handlers	568	49	24
Total	2,273	452	107

TABLE II

Evaluation of Methods Employed to Obtain 107 Initial Positive Cultures

From:	*Number*	*E.S.P.*	*E.S.*	*E.P.*	*E.*	*By Means of Endo Medium*	*P.*	*S.P.*	*S.*	*By Means of Bismuth Medium*
Cases	25	14	1	1	3	19	3	2	1	6
Contacts	58	10	..	10	14	34	19	5	..	24
Food Handlers	24	5	1	3	4	13	8	2	1	11
Totals	107	29	2	14	21	66	30	9	2	41
				61.6%					38.3%	

TABLE III

Evaluation of Methods Employed to Obtain 452 Positive Cultures

From:	*Number*	*E.S.P.*	*E.S.*	*E.P.*	*E.*	*By Means of Endo Medium*	*P.*	*S.P.*	*S.*	*By Means of Bismuth Medium*
Cases	328	41	33	9	81	164	40	102	22	164
Contacts	75	12	9	7	12	40	15	18	2	35
Food Handlers	49	13	3	8	11	35	10	2	2	14
Totals	452	66	45	24	104	239	65	122	26	213
			52.8%					47.1%		

tures in Table I are again found in Tables II and III. It will be seen that approximately 40 per cent of the positive findings would not have become available had sole reliance been placed on Endo agar for the isolation of the typhoid-paratyphoid organisms, though approximately 20 per cent of the positive cultures were obtained through this medium alone.

While bismuth sulphite agar is a valuable adjunct to Endo agar as a means of isolating a greater number of intestinal pathogens from feces examined routinely, it cannot entirely replace the latter. Moreover, Endo agar in expert hands may be successfully used for the isolation of the dysentery group of organisms that will not be revealed on bismuth sulphite media.

The value of a differential-enrichment medium in the form of bismuth sulphite agar would seem to be firmly established. These results also suggest that future modifications of such media may eventually culminate in further simplifying the routine examination of feces and increase the efficiency of the laboratory as an aid to the epidemiologist in the detection of typhoid carriers.

SUMMARY

An analysis of the merits of the Wilson and Blair bismuth sulphite agar, slightly modified, as compared with those of Endo agar for the isolation of intestinal pathogens is based on a total of 2,273 examinations of feces and urine.

In the finding of 452 positive cultures, the bismuth sulphite agar, when poured over 5 c.c. of a heavy fecal emulsion, accounted for an increase of approximately 40 per cent of the positive cultures.

Endo agar accounted for the recovery of typhoid and paratyphoid bacilli from 23 per cent of the number of positive specimens when bismuth sulphite agar failed.

In view of the positive findings obtained by means of the Endo agar alone, it is inadvisable at present to discontinue its use in favor of any recently developed differential plate medium.

A useful purpose will be served by supplementing the use of Endo agar with a differential plate medium such as bismuth sulphite agar for the routine examination of fecal specimens.

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Present Status of Vitamin Milks*

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THE discovery, in 1922, that rickets in infants and children is caused by deficiency of a specific dietary factor, now known as vitamin D, opened the way to a program of prophylaxis against this disease. The results already obtained, show that the prevention of rickets can be realized, and that this is one of the outstanding achievements in the field of preventive medicine. In temperate regions, the prevention of rickets through the agency of sunlight is not possible of realization. The methods available are: (1) the administration of suitable doses at regular intervals, at least during the colder months, of some one of the fish liver oils which are available; (2) the distribution of concentrates of fish liver oils containing vitamin D; (3) the distribution of viosterol, a product consisting of vitamin D derived from irradiated ergosterol, of yeast; (4) the irradiation of certain commonly used foods; (5) the feeding of irradiated yeast to cows, which then yield milk containing an effective content of vitamin D; (6) the fortification of some commonly used foods with a concentrated source of vitamin D; and (7) the general employment of ultra-violet lamps for irradiating the skin.

The vitaminization of milk, the food most constantly consumed by infants and children, is the method of choice in prophylaxis against rickets. It is the simplest, safest, and most economical way of getting the desired results. The experience of several years leaves no reason to doubt that vitamin D milks have come to stay, and that their distribution will increase.

The question has naturally been asked by many people: Are we liable to get too much vitamin D? *The Journal of the American Medical Association,* commenting on this editorially in 1931, said: "There is evidently an enormous range of safety between prophylactic or therapeutic dosage and the quantities that are likely to do harm. The toxic dose is probably 1,000 times the therapeutic dose of viosterol." The same Journal has also given editorial approval of irradiated milk and milk derived from yeast-fed cows. Up to the present, the latter procedure has been used only by the certified milk industry. It is clear that any of the methods enumerated provide safe and effective sources of the antirachitic vitamin. An important fact is that pasteurization or boiling does not depreciate the value of vitamin D milks. The approved content of added vitamin D in milks for prophylactic purposes is about 400 International Units per quart. This is approximately one-third the commonly

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used dosage for therapeutic purposes. Vitaminization of milk by any of the methods which are practicable has the advantage over other sources of vitamin D, that the active principle is made available in a highly palatable form. This is especially important to adults who are frequently averse to taking fish liver oils.

There are now scores of reports by clinicians setting forth the effectiveness of the vitamin D milks for prophylaxis against rickets. Opinion seems to be unanimous that the general provision of vitaminized milks is the method of choice. That such milks will have a field of usefulness in dietotherapy in certain diseases affecting adults is equally certain. This view is supported by the considerable number of reports of their use in the treatment of tuberculosis, in the treatment of fractures, in the prevention of tooth decay, in the treatment of trichinosis, in arthritis, and in the improvement of the general health. These milks should be very useful in safeguarding the health of pregnant and lactating women. Bunker and Harris have recently given a comprehensive discussion of the clinical status of vitamin D milks.

Since the vitamin D potency of milk can be determined only through a biological test or bioassay, it is necessary that health officials require such assays at suitable intervals, and that these shall be made by well equipped laboratories. This method is somewhat time consuming and expensive, but it is not necesary that assays be made oftener than once in a few months, provided samples are taken by officials at any time, and without the knowledge of the distributor. This knowledge will keep him on the alert, and insure proper coöperation with health officials in safeguarding the quality of the milks.

The employment of vitamin D concentrates made from fish oils insures not only the fortification of milk with vitamin D, but also increases significantly the amount of vitamin A which it will contain. Fortification with viosterol, provides vitamin D only. The same is true of irradiated milk.

After several years of constantly increasing distribution of vitamin D milks, and of extensive discussion of their use by physicians, there is scarcely a dissenting voice from the profession as to the desirability of their use in safeguarding the health of infants and children. Although less often mentioned, it seems clear that the pregnant and lactating woman stands in as great need of additional vitamin D, over that which she secures in eggs—the only food which is commonly eaten which contains appreciable amounts of this substance—as does the infant or child. The palatability of vitamin D milks makes them especially appropriate as a source of this nutrient for women, who generally dislike fish liver oils.

There has been some consideration of the desirability of adding to milk either vitamin C (ascorbic acid) or vitamin B_1, both of which are now available in the form of synthetic products identical with the naturally occurring vitamins.

Freshly drawn milk contains about 22 mg. of ascorbic acid per quart. The content steadily falls off under ordinary methods of handling, even before pasteurization, and the latter treatment destroys practically all of it. The cost of adding sufficient ascorbic acid to milk to make it serve as a safeguard against scurvy, is not prohibitive at present, and may be lowered in the future. The fact that citrous fruit juices are generally available for infants and children, and that raw fruits and vegetables generally are good sources of ascorbic acid, makes it less imperative that milk be forti-

fied with this nutrient than is the case with vitamin D, which is not available in sufficient amount in any of our natural foods. It is not likely that the medical profession will become very enthusiastic about the addition of ascorbic acid to milk for this reason.

As respecting the fortification of milks with the antineuritic vitamin B_1, one may say that there is some prospect that the pediatrician may see advantages in having such milks available, both for infants and for pregnant and lactating women. There is considerable evidence that many people are getting less than the optimal amount of B_1, because their diets are not of suitably high quality. Since the synthetic vitamin is now available in abundance, it is to be expected that the time is not far distant when sufficient clinical observations from its administration will become available to serve as a basis for judgment on this point. The wisdom of providing B_1 fortified milks must await the initiative of the medical profession. It is yet too soon to make any recommendation relative to this matter.

Regarding vitamin A, it is interesting to note that a number of studies have shown that the new-born have almost no store of this substance, which is extremely important for the health of the epithelial structures. Colostrum is several times richer in vitamin A than is milk, and it seems extremely important that the very young should be fed this vitamin liberally for a time in order to fill up their livers with it. It has been shown that pups require several weeks of suckling in order to raise the content of vitamin A to half the content of the livers of their mothers. For this reason, it would seem that fish liver oil concentrates are better sources of vitamins for addition to milk which is to be taken by the very young infant than are other sources of vitamin A and vitamin D.

In conclusion, it may be reiterated, that the vitaminization of milks with respect to D is of established value. Milk distributors and health officials will do well to delay offering to the public any other kinds of fortified milks until the medical profession asks for them.

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Postgraduate Education of Physicians in Pediatrics*

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ATTEMPTS to provide for postgraduate education of general practitioners have taken many directions. The physician in the city has available hospital clinics, lectures, and staff conferences. He usually has fairly frequent medical society meetings with speakers to cover the newest advances in the various branches of medicine. In addition he has the priceless boon of library facilities. The rural practitioner, on the other hand, unless he is particularly fortunate, has almost none of these opportunities. This deficiency has been recognized and measures have been taken to overcome it. One of the most successful has been the holding of so-called institutes where short intensive courses are given by men of ability. Such institutes, however, must be given at some central point and are intended to attract physicians from a large area. This, of course, entails the necessity of some of the men coming very long distances, and to get any real benefit from the course of lectures, they must remain away from their practices anywhere from a few days to 2 weeks. Such a course is often impracticable for many country practitioners. Although these institutes have met with excellent response, there still remains a large group of men who are not reached by such efforts and who are entitled to consideration.

In the summer of 1936, Dr. J. H. Mason Knox, Jr., Chief of the Bureau of Child Hygiene, Maryland State Department of Health, initiated a program with regard to pediatrics, designed in part to meet the needs of this group of rural physicians, in more or less outlying areas. A full-time pediatrician was employed, who was to concentrate on one section of the state as a demonstration area.

The district chosen includes 3 counties in southern Maryland, comprising an area of approximately 1,000 square miles. The population is about 40,000 with, roughly, half of the inhabitants colored. The largest single community has a population of 700. Corn and tobacco form the chief income producing crops. A good deal of the farming is done on a tenancy basis and the general economic level is quite low. Although the infant mortality has been declining in recent years, it is still in the neighborhood of 100, with the colored mortality usually about 150 and the white about 80. Only one-third of the deaths may be ascribed to neonatal causes and diseases of early infancy.

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There are about 25 doctors in practice, varying from 1 to 61 years in experience. Two of the counties have small, fairly well equipped hospitals. Indigent patients in need of special hospital care or clinic consultation must go to Baltimore, 60 to 120 miles distant. Venereal disease, obstetrical, mental hygiene, and orthopedic clinics are held regularly, at various intervals, in all these counties.

The program as designed was to be threefold in object: (1) to provide free consultation service in pediatrics for all patients referred by local physicians, (2) to attempt to increase the local physicians' knowledge of pediatrics, (3) to stimulate lay interest in child hygiene problems. This report will deal primarily with the second of these objects.

The method followed was worked out as follows: All the physicians in the county were interviewed individually, the consultant was introduced and the program explained. They were told that at certain times weekly, the pediatrician would be in the county health office and would be available for consultation. This could be held either in the physician's office, the patient's home, or the health office.

The reception at these first meetings varied considerably, from a hearty welcome to indifference, and in one or two cases, suspicion and skepticism.

After the preliminary meetings the schedule of visits was followed out as planned. As expected, the response was relatively meager and confined to requests from those physicians who had been most cordial. The technic followed thereafter was to make calls at random on the various practitioners and to discuss with them whatever problems might arise during the course of general conversation. By this means many of the physicians were convinced of the sincerity of intentions and honesty of motives of the State Department of Health and the pediatric consultant. Almost invariably there would be some discussion of questions of diagnosis and treatment in pediatrics. Often before the end of such a visit the physician would recall a case in which he would like assistance and suggestions, and would make an appointment for consultation the following week. In other instances progress was not so easy and coöperation was secured only after several visits at intervals of a month or two.

It seemed clear from the outset, and the notion has been confirmed in practice, that such a program as this cannot be pushed along faster than the local conditions warrant. General practitioners who have been self-reliant and independent for many years naturally do not like to have new schemes forced upon them. One of the most coöperative physicians at present made no requests for consultation during the first 9 months.

The program as outlined has now been in effect for slightly over a year, of which a goodly part was spent in laying the foundations and securing friendship and coöperation. Evaluation of the results is by no means easy. An appreciable reduction of both sickness and deaths cannot be expected before a considerable time has elapsed. That many individual cases have benefitted from the consultations was to be expected. This, of course, is a temporary affair. What has been accomplished of a lasting nature?

Of the 25 physicians in practice in the area about 75 per cent have made one or more requests for consultation. Of the 16 most active physicians only 1 has failed to avail himself of this service. About 250 consultations took place in the first 12 months, with a fairly steady but irregular increase evident. Naturally some consultations have been more fruitful than others. In general the physicians have shown

themselves very willing to accept suggestions and advice, and the resistance to new ideas has been considerably less than anticipated.

There has been no correlation between the number of years in practice and willingness of coöperation. Several of the older practitioners have made very frequent calls for the service.

The crucial test of the value of this method of bringing pediatrics to the general practitioner hinges on how much new knowledge in the field is acquired and retained. Examinations of any sort obviously are not feasible. The sole way to judge would seem to be the impressions of the consultant himself—such impressions being of naturally limited scope. One would like to have similar situations come to the attention of individual physicians so that he might note any changes in attitude or perspective which might be attributed to the influence of a previous consultation or discussion. Unfortunately such an arrangement has occurred but infrequently in the comparatively short experience we have had. Most of the practitioners in the area where this program has been carried out have been in practice for a number of years, have had to depend on themselves exclusively, and have accordingly worked out methods of treatment satisfactory to them for most of the common ailments with which they are confronted. It is asking quite a good deal to expect that they will embrace with open arms the new and often apparently revolutionary ideas of a young man, no matter how well trained. Each practitioner has first to convince himself that the pediatrician's ideas are sound and that his methods work. Nor is it of much help to find the consultant advising, as often he must, that a given case requires specialized hospital care and accordingly must be sent off to the city. Parenthetically this is a good place to call attention to the almost uniform indifference with which many hospitals treat the busy country practitioner. The patients whom he refers to hospitals are often discharged without any notification to the physician as to further care or follow-up. A letter at the time of discharge would not only be of very great value to the physician in his handling of the individual case but would often be a material help to his understanding of the problem and his approach to similar cases in the future.

The one field in pediatrics where repetition of similar cases might be expected to be frequent and where there is considerable room for improvement is that of infant feeding. It is in this field, moreover, that the most definite evidence of benefit has been obtained. Description of simplified, rational methods of feeding has been welcomed, and such methods, once their value has been demonstrated, have been put into steady use by several of the physicians. The treatment of infantile diarrhea, one of the major causes of infant mortality in this area, has not fared quite as well although some of the physicians have now adopted present-day methods. Both in infant feeding and in the treatment of diarrhea, the consultant has been asked by some of the practitioners to prepare written outlines for their individual use. This has been accomplished with apparent good effect.

Beyond these two large groups of cases there has been a great variety of diseases upon which advice has been asked. In not a few of these the consultant has been at as much of a loss as the referring physician. In others, conditions have been recognized by the consultant and the diagnostic points made sufficiently clear so that on subsequent occasions the general practitioner has done well, unaided.

In the light of the present experience a few disadvantages of this method stand out. There is a relatively large amount of time wasted, chiefly in travel. In order to cover an area of any size and make regular visits to designated points, there are, of necessity, a good many hours spent in driving back and forth. The average weekly distance traveled by automobile has been about 500 miles. There is a further waste in the inevitable waiting around in order to fit the consultant's schedule to the schedules of the local physicians. It is obviously essential to make every effort to have the physician present during the history taking and the examination. With busy practitioners this is not easily arranged. Another disadvantage, related to the first, is the relatively small quantitative return for the investment. A much smaller audience is reached than that possible for formal lectures. In such lectures or hospital demonstrations the subject of children's diseases may be covered in its more important aspects in the space of a few weeks. Of course, such an intensive course cannot hope to clarify all the phases of children's diseases which are discussed, nor can one be sure that the individual physician carries away the important lessons. A further drawback of the present method is the inability to plan the work to cover the field of pediatrics properly, for one must take only what opportunity offers in the shape of patients for consultations.

It is hoped that, after a time, the subjects missed during consultations may be gone into in addresses before the county medical societies. Such talks would be of great help in supplementing the other work but thus far there have been only a few opportunities to make them.

On the favorable side, a few points may be made. The advantages of having an actual case as a basis for discussion cannot be overemphasized. It is obvious, of course, that in the discussion of any case, no matter how simple, any number of problems may be brought up and gone into. When Jacobi introduced hospital bedside teaching in pediatrics in New York at the time of the Civil War, a great step forward was taken. With the impetus given by Dr. Osler, most of the medical schools in this country soon embraced bedside teaching in hospitals as a fundamental part of the course. Yet we must not forget that before the present era of highly efficient medical schools, the greater part of medical teaching consisted of an older practitioner taking the younger one around and introducing him to the "mysteries" of the art as he made his rounds from patient to patient. The loss of this experience and relationship has not been entirely replaced in our schools, and few would deny that many graduates in medicine go into practice with an inadequate knowledge of pediatrics. Bedside demonstration during the course of consultation is of inestimable value in learning the significance of physical signs peculiar to childhood.

Another advantage on the side of bedside teaching of physicians in practice must not be overlooked. Most of these men are busy, conscientious, overworked and underpaid practitioners. Their problems and difficulties can be appreciated much better by one who actually works with them and sees the "problems" at first hand. It is much more helpful and efficacious to be able to give advice adapted to the exigencies of the individual situation.

The personal contact with the physicians means a great deal. Sound and unsound ideas may be thrashed out with benefit to both parties. Advice and suggestions may be made with proper emphasis and with reasons and

explanations given. The alleged existence of an ultra-scientific attitude on the part of the recent graduate and the specialist may be exploded quickly when the general practitioner has a chance to talk things over with the specialist. In this way some of the reasons for skepticism of the general practitioner toward proved newer methods may be overcome.

One further advantage is to be listed. The cases which form the subjects of the consultations are usually the children of indigent low-income families. These patients certainly derive more or less benefit from the consultations, which up to now have been entirely unavailable to them both because of inaccessibility and expense involved.

SUMMARY

In the State of Maryland, the Bureau of Child Hygiene has put on its staff a pediatrician to be available as full-time consultant for the general practitioners in a strictly rural area with a high infant mortality.

One of the objectives has been improvement of the pediatric knowledge of the local physicians. This has been attempted through the medium of using the individual consultations as opportunities for discussion and instruction.

Since its inception, there has been gradually increasing coöperation from the large majority of physicians. A total of 250 consultations were made during the first year. It is impossible to assay the results with any accuracy but some benefit has been derived. Advantages and disadvantages of this method of postgraduate education have been discussed.

What Every Health Officer Should Know

Vital Statistics*

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WHEREVER statisticians are gathered together in large or small groups, the conversation ultimately turns on the question of quinquennial census taking. Since all our mortality rates are based on census figures, accurate population data are essential. In a country such as ours where the usual natural increase of the population has been upset by changes in birth rate, cessation of immigration, etc., former methods of estimating population are no longer of value. We have certain statistical tricks which help somewhat in arriving at such estimates in the early years of the intercensal period, but in the latter half we are hopelessly at sea in the whole matter. It is vital to the whole public health field that we become not only articulate in demanding a U. S. Government Census every 5 years, but that we become noisily and unpleasantly vocal on the subject in order to get congressional action.

The ageing of the population is a problem which confronts all vital statisticians today. The rapid decline in the birth rate, the decline in immigration, amounting in some years to an excess of emigration over immigration, and the saving of young lives through protective health measures are changing the age distribution of the population so rapidly that we may confidently expect an increase in the general death rate in the not too distant future.

This changing age picture necessitates modifications in death rates for comparative purposes. There is need either to standardize such rates for age, or to establish rates on the basis of the age groups of the population most affected by the disease or cause under consideration. For instance, the rates for degenerative diseases would be based on the population aged 45 and over, and the rates for communicable diseases of childhood on the population under 15 or 16.

The recent social welfare movements undertaken by the U. S. Government and various voluntary groups have created a demand for information not now called for in the standard birth and death certificates. Under pressure from such groups many states have been or are making changes to comply with such requests, with the result that there is considerable departure from the original plan to have "standard" certificates in use in all states. So a request was made to all state registrars to withhold, if possible, further changes until a general committee could take up the whole matter

* Read before the Health Officers Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 7, 1937.

and recommend changes acceptable to all. Such a committee is now at work and expects to report next year.

The so-called Registration Area, which has been built up over the past generation, now covers all the 48 states for both births and deaths. We might call this the horizontal or extensive phase of vital statistics registration. Now that that objective has been attained, we are turning our attention to the refinement and improvement of the data reported in what we might call the intensive or vertical phase. One step toward this is the reallocation of deaths to usual place of residence of decedent and in the case of births to usual place of residence of mother. Several states are now doing this routinely to the very great improvement of the resulting data.

Then, too, there is the interchange of death certificates of persons dying in states other than their place of residence. The Vital Statistics Bureau of the U. S. Census is acting as the clearing-house in this procedure. Negotiations looking toward a similar plan with foreign countries are under way and Canada is already exchanging copies of certificates of alien decedents with border states.

Right at the moment the *International List of Causes of Death*, the basis of vital statistics in this country, is undergoing its 10 year revision by a committee of the American Public Health Association preparatory to the decennial meeting in Paris to be held in 1938, when over 40 countries which adhere to this list send representatives to consider revisions and make decisions to stand for the next decade. The United States changes suggested are along the line of reclassifications to meet the newer knowledge in pathology and bacteriology. Also, they attempt to eliminate certain common undesirable designations of disease, and to emphasize acceptable terms.

One of the most baffling problems is the assignment to a single cause a death for which the death certificate certifies more than one cause by the attending physician. Various methods of educating physicians to give their own version of the actual cause of death are being considered, involving some changes in the method of stating the inquiries on the certificate. Differences in handling this so-called "joint causes of death" problem by the various countries invalidates to a great extent comparability of vital data between countries, the very purpose for which the *International List* was established.

The whole question of accident statistics has become a staggering problem. "Deaths from all accidents" is now the sixth leading cause of death in the United States. If our purpose as public health workers is to prolong life as well as prevent disease, serious attention needs to be directed to this field. The Vital Statistics Section at this meeting has passed a resolution calling on Congress and the President for a 2 year appropriation to analyze the whole field of accident statistics, with a view to finding out where preventive efforts can best be concentrated.

I would not wish to conclude this brief presentation without paying tribute to the fine leadership in this field which we have in Washington in the Vital Statistics Bureau of the U. S. Census. With limited appropriations they have begun many innovations which will revitalize the whole field of vital statistics in this country. A small field force stands ready to give advice and counsel to local or state health officials on all matters pertaining to the vital statistics field.

Finally, I would urge you to consider the vital statistician in your department as a pathfinder. He should use the story of events already past to forecast drifts in the future and should

be a vital factor in helping to decide where emphasis in future plans and programs should be placed. Some health departments, both state and local, have expanded his functions and have made him statistician of the entire health department. Bureaus of communicable diseases, of nursing, and laboratory, all have statistical needs, and a well trained vital statistician can serve them all.

If your vital statistician is just a fellow who sits in a corner and fiddles with figures all day and makes up a lot of complicated tables, the printing of which budget limitations usually prohibit, get rid of him, and get a statistician who can analyze those figures, interpret what they mean for future health work in words of one syllable, one who can really be a pathfinder and thus take his rightful place in the glorious business of life saving in which we are all engaged.

Personal Gifts Needed by Physicians

ON the occasion of the presentation of the prizes at the London Hospital Medical College, Dr. Robert Hutchinson, President of the Royal College of Physicians of London, summarized the qualities needed by a physician for success as follows:[1]

First, good health, since there is nothing so tragic as a sick doctor; second, luckiness, though he warns that if one does not have luck, hard work and patience can make up to a great extent for the lack of it. Curiously, he places brains third, and warns that there must not be too many since it is unnecessary and perhaps even dangerous in medicine to be too clever. Extra diligence will make up for any shortage in brains. His next gift is equanimity, the power "to turn a keen untroubled face home to the instant need of things." Equanimity, however, must not be confounded with indifference. Next comes a sense of justice, first to the patient, then to one's self, to one's professional brethren, and to the profession as a whole. He regards the sense of beauty, his next requirement, not as a luxury but as a saving grace, a compensation for the sordid things which must happen in a doctor's life, and a way of escape—"a sanifying and steadying influence." This may be displayed in a love of art, music, current literature, or anything which cultivates the higher tastes of life. He places last in his list—though he considers it the best of all—the sense of humor. This prevents one from taking his profession and himself too seriously and will remind him that there are other things in life worth having besides health. This sense cannot be cultivated in solitude. The possession of the senses of justice, of beauty, and of humor will go far to insure the equanimity needed by doctors to face the life they must lead.

REFERENCE

1. *Lancet*, July 9, 1938, p. 61 (Abst.)

What Every Health Officer Should Know

Industrial Hygiene*

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IF I understand the mind of the health officer, he is interested primarily in organization, administration, and legislation, rather than in details pertaining to industrial toxicology or various industrial health hazards. Our Section has Committees on Lead Poisoning, Compensation, Volatile Solvents, Skin Irritants, Ventilation, and other allied subjects. The reports of these committees are printed in the Association *Year Book*, reference to which may be made for recent developments along these lines.

ORGANIZATION AND ADMINISTRATION

Possibly the most important development during the last year has been the creation of a Council on Industrial Health by the American Medical Association. This council is now in the process of being organized, and will function as a standing committee of the Board of Trustees of the American Medical Association.

During recent years, in addition to the work which various private industrial organizations have carried on, 3 federal agencies have been active in this field. The Division of Industrial Hygiene of the U. S. Public Health Service has exerted a stimulating leadership in this field and has carried on scientific studies and promotional work with reference to various industrial health hazards. The Bureau of Mines in the Department of the Interior has carried on studies particularly among the mineral and allied industries, while the U. S. Department of Labor has been instrumental in securing uniform laws, and has carried on important statistical studies.

During the past year or two a marked advance has taken place in the organization of state and local bureaus of industrial hygiene. This advance undoubtedly has been due to the leadership of the Division of Industrial Hygiene of the U. S. Public Health Service, as well as the Committee on Industrial Hygiene of the Conference of State and Provincial Health Authorities of North America.

According to information supplied by the U. S. Public Health Service, the following 22 states at present have divisions of industrial hygiene in their state departments of health: Alabama, California, Connecticut, Illinois, Indiana, Iowa, Kansas, Michigan, Mississippi, Missouri, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia and Wisconsin. In 2 states

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(New York and Massachusetts) such bureaus are established in the state departments of labor.

In addition to the development of such divisions in state departments of health and labor, 4 cities have inaugurated such divisions of industrial hygiene in their city departments of health, namely, Baltimore, Detroit, St. Louis, and San Francisco.

DEMAND FOR TRAINED PERSONNEL

One result of the marked advance in the development of Bureaus of Industrial Hygiene in state and local units has been an increased demand for trained personnel which it has been difficult to meet. This emphasizes the need for a more comprehensive program of teaching industrial hygiene in medical and public health schools throughout the country. In a survey which I made two or three years ago, it was found that only 13 out of 85 medical and public health schools in the United States and Canada give separate courses on industrial hygiene or industrial medicine. Several medical schools include one or two lectures on this subject in their general course on preventive medicine and public health, while a considerable number of such schools give no attention whatever to this important and growing subject.

COMPENSATION FOR OCCUPATIONAL DISEASES

The following 13 states now have compensation legislation covering a limited list of specific occupational diseases: Kentucky, Minnesota, Nebraska, New Jersey, North Carolina, Ohio, Rhode Island, West Virginia, Washington, Indiana, Pennsylvania, Michigan and Delaware. Eight states (Connecticut, Illinois, Missouri, New York, North Dakota, California, Massachusetts, and Wisconsin) have blanket provisions with more or less general coverage of diseases arising out of or in connection with employment.

There is no question but that compensation legislation covering industrial accidents led to a rapid increase in safety activities throughout various industries of the United States. It is equally certain that the increasing legislation adding occupational diseases to the compensable list will further stimulate the development of industrial health promotion and sickness prevention.

REPORTING OF CASES OF OCCUPATIONAL DISEASES

The following 21 states now require the reporting of occupational diseases to state authorities: Alabama, Arizona, Connecticut, Georgia, Illinois, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, and Wisconsin.

INDUSTRIAL HEALTH APPRAISAL

The appraisal idea, which has been applied in past years to city and rural health units, recently has been extended to the industrial health program, and a Sub-committee on Industrial Health Appraisal of the Committee on Administrative Practice of the American Public Health Association is now engaged in furthering this plan. A paper by E. L. Simonds and E. R. Dejon, presented before our Industrial Hygiene Section at this meeting, indicates the views of one industrial organization which for the last 4 years has put the *Industrial Health Appraisal Form* into use as a regular company routine. It is hoped that other industrial organizations may see the value of applying the appraisal principle to their industrial health programs in the future.

ORGANIZED RESEARCH

In addition to research in industrial

hygiene now carried on by various governmental units and by many industrial organizations, there has been some recent development of special groups for organized research, including such agencies as the Air Hygiene Foundation of the Mellon Institute in Pittsburgh, and the Laboratory of Industrial Toxicology, of the DuPont Company in Wilmington, Del. In addition to these, one or two of the larger universities are now considering the development of special research institutes on industrial hygiene, with the idea of developing coöperative activities between local industries and university faculties.

INDUSTRIAL HYGIENE SECTION

The all-inclusive interests of the Section on Industrial Hygiene of the American Public Health Association may be noted by referring to the program of the current Section meetings, which covers, among others, such subjects as "Syphilis Control in Industry," "A Symposium on the Heavy Metals," "Lead Poisoning," "The Importance and Diagnosis of the Industrial Dermatoses," and "Vaccines Against the Common Cold."

In conclusion, attention should be called to recent significant experiments carried on by a group of research workers at the University of Toronto. Although these experiments are of a tentative and preliminary nature, it would seem that tiny traces of aluminum dust, added to the dusty, silica-filled air breathed by certain classes of miners, may some day stay the ravages of silicosis. In this study the addition of small quantities of metallic aluminum dust almost completely inhibits the solubility of silicious materials in laboratory beakers, and rabbits dusted with quartz to which less than 1 per cent of metallic aluminum dust had been added, showed practically no lung fibrosis, which is one of the characteristic pathologic findings in silicosis; while control rabbits dusted with quartz alone showed well developed silicosis. If these preliminary experiments are subsequently confirmed by other research workers, and are found practicable from the standpoint of the prevention of human silicosis, the time may come when the funeral ritual, "Dust to dust" may be adapted as a slogan by the industrial hygienist to read, "Dust *for* dust"!

What Every Health Officer Should Know

Health Education*

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PUBLIC health education is beginning to be recognized as an important tool rather than a decorative feather in the cap of most health organizations. This change has been brought about by health officers as well as by better prepared health educators who together are studying the problems of their communities and the means by which many of them can be solved through education.

A marked change has taken place during the last 10 years in viewing the possibilities of health education. Health education started as a missionary movement—a way by which individuals, by certain practices, could work out a health salvation for themselves. A number of things were found to be wrong with the movement. First, but with few exceptions, there is no general rule for reaching the healthy life which can be applied to all persons; second, there are few personal practices which will do much to maintain health without medical guidance. This knowledge has shown the limitations of the earlier conception of health education and has opened up a vista which is as wide as the health officer cares to make it.

There are two schools of thought in relation to the presentation of health material. One would employ the commercial technic, and the other regards this approach as unworthy of the serious subject and its effect upon the lives of many. Commercial technic is effective if it is modified and considers that men and women will pay for an article readily, while they change their habits only after much consideration and prayer. Then, too, the market for commodities assumes new fashions, while the health needs of a community change less rapidly. If the buyer finds that an article has been advertised as having virtues that he finds lacking, he will buy another product the next time. If he has been misled regarding the results of health practices he becomes a ready victim for the charlatan and the cults, and opposed to the whole system of scientific health protection.

Generally speaking, no two communities will respond to the same type of approach, any more than will all sections of one community respond in the same way. This means that to make a program effective many kinds of media will have to be employed at the same time. The newspaper and radio likely will affect about 20 per cent of a given community, and the other 80 per cent will be left untouched by these means. The health officer who relies upon a newspaper man alone to

* Read before the Health Officers Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 7, 1937.

tell his story to the public will find that a large part of the population is not being impressed. The same will be found true when radio, or printed material, or group meetings are used exclusively.

As a result of a better understanding of the various avenues of approach necessary, few communities are boasting of results obtained by educational tricks.

Any health officer who wishes to sell public health to his community will have to start with a sound approach. This means that he must be sure that the material which he presents is scientifically honest, that it is vital to his community, and that he has facilities available for the residents to accept his advice. This is particularly important if he wishes to eradicate tuberculosis or syphilis. Perhaps his program is being presented to enable him to obtain these facilities. If it is, his approach will be different from that made when facilities are available. However, once the facilities are obtained, good practice dictates that a purely emotional approach will accomplish little without sound education disseminated by every possible means.

Syphilis programs are claiming the attention of most health departments today, and well they may. Those whose job it is to influence public opinion are concerned with the form this education will take, and whether some of the programs proposed will only continue the emotional response to the efforts. Syphilis is a communicable disease and education regarding it must take into consideration the rather sketchy ideas most persons have regarding the communication of disease and the need for supplying some basic education on which to pin specific education regarding syphilis. Consideration must also be given to the problem in a given community. Residents of homogenous communities in which public health has been promoted are not moved to action by the knowledge that 40 per cent of certain racial groups are found to have syphilis. The more favored groups will assert that "it can't happen here," and go merrily on their way. Large sums of money are being appropriated for syphilis control and health educators will have to show some results for its expenditure.

The person employed today to do health education for a health department must know something of public health problems, sociology, economics, the interpretation of vital statistics in relation to population make-up, as well as advertising, salesmanship, journalism, and pedagogy.

Some few of the schools are making an attempt to provide this education for students. The report of the Committee on the Professional Education of Health Educators shows that serious consideration has been given to the preparation of the hybrid person who is to interpret the findings of science and the laboratories to the everyday man. The wise health officer will expect the same professional standards from his health educator that he expects from his epidemiologist or his director of nursing.

The first step in any health education program should be made with the employees of the health organization. Every health department has many non-professional employees—inspectors, clerks, stenographers, and others who are concerned with routine activity. These people can be of great value in promoting the program, or they can destroy the sincere efforts of the health officer and the health educator. The inspector who tells all and sundry, in and out of work, that he would not have his children protected against diphtheria, has no place in a modern health department if his opinions cannot be changed. Intensive education for all employees which will make them

feel important messengers of the program pays big dividends.

The Fuller Brush man is still keeping a good part of the country supplied with brushes and brooms. He goes from door to door and brings his wares to the people. The public health nurse brings the public health program to those who would never know of it in any other way. She is the salesman who must take the time to discuss the merits of the suggested practices, to listen to the objections, and within the limits of environment show the family the advantages of preventive medicine. She will be successful if she has learned the educational approach and the motives which will cause persons to accept what she has to offer.

Physician preparation is the next step. No wise merchant would buy a page of advertising in the *Saturday Evening Post* without first being sure that his product is understood and for sale by the retailer. The practising physician is the purveyor of preventive medicine. Unless he is kept informed and made an active part of the program, he will likely discredit the effort because he is not ready to dispense the service. The local medical society provides the best means for reaching the physician, and its official sanction gives a coöperation which cannot be obtained in any other way.

Those who influence public opinion are important allies of a health department and deserve to receive information before the program is given to the public. The clergy of all denominations, teachers, social workers, club members, and others who feel that their word counts, will influence many persons and establish constructive attitudes toward public health problems.

The attention of the press will come when the health department has something to offer. Newspapers want news which will be read. The modern health department is teeming with news of vital interest to every person in the community. The vital statistics gathered by the health department are a record of the joys and sorrows of the people. If they are interpreted intelligently to the press, they form a base on which much health information can be built. The persistent reporter who wants to know the why of things is not being just annoying. He is trying to find the answer to the countless questions which will come to his readers from the simple statement of facts made by the health officer. If he is given an honest picture of the situation, with enough details to help him to understand it, rarely will he betray the health officer. If on the other hand, he is given a garbled account which endeavors to cover inefficiency or lack of knowledge, the health officer may well fear the worst.

The radio offers a medium which reaches many homes. The health message is padded between commercial programs for which all sorts of attention-getting devices are used. The health message must be unique and refreshing and arrest attention without being blatant. Real skill is necessary to accomplish this. Real personalities are needed to convey the message.

Literature is valuable if it is carefully prepared, well printed and illustrated, and distributed with discrimination. Very few health departments have a sufficient budget to buy quantities of good literature, and the American Medical Association, American Public Health Association, national health organizations, the insurance companies, and a few other commercial concerns, prepare and distribute pamphlets which may be used by health organizations. The insurance companies produce the best of the commercial literature which usually is prepared by scientific writers and which does not aim to sell a specific product. There are some duplicating

machines and other devices which may be used by the health organizations to prepare material which has local significance. With a certain amount of ingenuity and a small budget, much can be accomplished by the organization personnel.

Person to person education is important and requires an endless amount of time, but the results repay the effort.

The success of health education will depend first upon the standing of the health organization which promotes it, and the sincerity of purpose which it has established; and then, upon the preparation and adequacy of the health educator and the coöperation which he receives from the entire staff.

The day of policing is pretty well over for public health organizations. It is being replaced by sound education by which the community will be able to make decisions which have social value.

One of the most urgent needs in health education today is a technic for evaluating programs as a whole, and then the constituent parts of the program in order that the greatest results may be obtained from the expenditure of money available. A committee within the Public Health Education Section is studying methods of evaluation and it is hoped that some worth while recommendations will come from this meeting. The Committee on Objectives likewise will report on efforts to clarify the relationships of public health educators, school health educators, and the countless other persons who find health education a part of another job for which they were employed.

Public health educators are realizing their responsibilities, their need for understanding the problems of human beings in relation to health, and the best means by which persons may learn to solve these problems.

What Every Health Officer Should Know

Public Health Nursing*

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IT would seem appropriate to begin a review of recent developments in public health nursing with a discussion of activities in the field of public health nursing education, since this is fundamental to all public health nursing activities.

In December, 1918, the Rockefeller Foundation invited a group of nursing educators, physicians, public health nurses, and individuals eminent in the field of public health and social research to consider this topic. "The proper training of public health nurses" was the problem presented to the committee. The study upon which this group embarked, under the chairmanship of Josephine Goldmark, has been generally known as the Goldmark or the Rockefeller Report on Nursing and Nursing Education in the United States. Soon after this study began it became clear that, if sound conclusions were to be attained, the entire field of nursing had to be taken into consideration.

In preparing to solve the problem confronting Miss Goldmark and her committee, namely, that of meeting the need for more adequate nursing service in the field of public health, an analysis of the basic professional education was found to be of paramount importance. Although the Goldmark report was followed by illuminating surveys conducted by the Committee on the Grading of Nursing Schools, the program in the basic professional education for public health nurses is still a challenging problem. In reviewing professional histories public health administrators still find applicants with inadequate basic nursing preparation.

If the Curriculum Guide for Schools of Nursing, prepared by the National League of Nursing Education and published in 1937, could be put into universal practice, nursing education would be fundamentally improved. In this, increased emphasis is given to the social and the economic aspects of health and disease. Teaching methods are given the prominence they deserve. In the past nurses have relied largely on content to guide their teaching and have not always known how to stimulate and encourage the individual to acquire health knowledge and to put it into practice.

Not until there is a complete separation of the responsibility and the budget for hospital service from those for the school of nursing will this broader concept of nursing education

* Read before the Health Officers Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 7, 1937.

be realized. Tax appropriations or educational endowments are needed to make a high standard of professional nursing education more universally available. There is increasing agreement that the requirements for entrance to the school of nursing should include a broad and sound preliminary education.

Although the Rockefeller Report was published as early as 1923, it gave as a part of its first conclusion that as soon as practicable all agencies employing public health nurses should require a postgraduate course in public health nursing. The survey of public health nursing made by the National Organization for Public Health Nursing in 1932, and published in 1934, shows from a sampling of urban and rural public health nursing service that only 7 per cent of the public health nursing staff, not including supervisors and executives, had completed an accredited course in public health nursing. A study made 5 years later, in 1937, and as yet unpublished, shows that 29 per cent of the nurses employed in the official agencies studied had completed an approved course.

Although this is a gratifying increase, the demand for public health nurses meeting the minimum requirements for public health nursing positions as set forth by the National Organization for Public Health Nursing still greatly exceeds the supply. Stipends granted by state health departments to candidates for preparation in public health nursing have played a large part in increasing this number. That the problem of further preparation for staff nurses and potential staff nurses is still a large one is evidenced by census figures for public health nurses, which have been compiled by the public health nursing consultants of the U. S. Public Health Service and the U. S. Children's Bureau. On January 1, 1937, 21,656 public health nurses were employed by official and unofficial agencies in rural and urban areas.

Curricula in public health nursing are now offered in 17 universities and colleges throughout the country. At a conference on public health nursing education held at the U. S. Public Health Service in Washington, D. C., on April 1, 1937, at which directors of courses in public health nursing and consultants from the U. S. Public Health Service and the U. S. Children's Bureau were present, the following statements were made with regard to the qualifications of students on stipend who attend these courses:

1. The majority of students on stipend met the matriculation requirement of the respective universities; the exception to this was a group of Negro nurses attending a special curriculum.
2. The current selection of students by the state health departments was superior to the previous selections. The greatest value from the period of study can be attained only if the student has satisfactory background and has demonstrated her ability and general aptitude for public health nursing.
3. The personal qualifications of the applicant as they influence her competence for the public health nursing field should be carefully considered.
4. It is desirable that students should have had an introduction to public health nursing through experience in visiting nursing.
5. Preference in granting stipends should be given to candidates having had an adequate clinical preparation.

With regard to the curriculum the group stated:

1. There should be close correlation between field practice and theory.
2. It is recommended that in both theory and field practice the promotion of health, the prevention of disease, and the nursing care of the sick be emphasized, since increasing emphasis is being given to comprehensive community public health nursing services.

The outstanding needs in public health nursing education were given as:

1. Basic nursing preparation of the student should be improved; if necessary it should

be supplemented before formal training in public health nursing is begun.

2. The establishment of additional facilities in conjunction with the health department for supervised rural field practices is essential to meet the needs of the increased student group.

3. Opportunities for advanced preparation in control of syphilis, control of tuberculosis, orthopedic nursing, and maternity nursing should be established under the direction of university departments of nursing education.

In order that this additional preparation of the public health nursing personnel may result in improving the quality of performance, supervisory and advisory services are playing an increasingly important part in the administration of public health nursing. Under the auspices of Western Reserve University and the National Organization for Public Health Nursing two conferences on supervision of public health nurses have been held for supervisors in the Midwest.

"Teaching on the job" by supervisors is a necessary corollary to adequate staff preparation. The increasing demand for supervisors prepared to do this is a significant development.

Throughout the country public health nursing services have been increased and extended, especially in rural areas, through grants-in-aid to the states under the provisions of the Social Security Act. Nursing programs are not being enlarged as a separate entity but as one part of the community public health plan. New objectives in the general health department program are reflected in the nursing services. For example, in certain areas reports of activities indicate that public health nurses are including programs for the control of syphilis and pneumonia in the general family health services. In some of the programs promotion of better nutrition is being stressed. The nurses' knowledge of this subject is being enriched and the program guided by special consultants in nutrition.

Several private agencies are studying ways and means of improving the nursing service for patients having chronic diseases.

Public health nursing services in school health programs are being more closely integrated with courses of study and with the activities of the teaching staff.

The increasing demand for a more complete maternity program is directing attention to rural areas that have established nursing services in the home during delivery. Varied methods of administering these services are being inaugurated. When these are compiled and analyzed, inportant data on administrative practices in home delivery nursing services should be available.

Locating crippled children, assisting with arrangements for their hospital care, and assuming greater responsibility for their after-care are developments in the local nursing program.

As more opportunities for social and health services in the community are developed, public health nurses are becoming increasingly aware of the need for establishing definite relationships with workers in the fields of nutrition, social work, mental hygiene, and education, so that the varied programs may achieve their common goal of better health and social security for the community.

In the American Public Health Association the Public Health Nursing Section seeks to integrate its activities with those of other sections and to interpret underlying principles and current trends in the practice of public health nursing and in turn gain knowledge concerning the activities of other groups. The section is closely identified with the National Organization for Public Health Nursing, which is the standard and policy making organization for the profession. The American Public Health Association's Public

Health Nursing Section promotes these standards through the activities of its committee members. Public health nursing is represented on the four Standing Committees of the Association. Throughout the past year section sub-committees have been appointed to study relationships between official and nonofficial public health nursing agencies; to study the function of the Public Health Nursing Section in its relation to other national organizations; and a committee was appointed to define public health nursing problems needing research and study.

TO SUMMARIZE THE DEVELOPMENTS

There has been an extension in the facilities for public health nursing education. A curriculum guide for schools of nursing has been published which should favorably influence basic nursing education. There has been an increase in the number of public health nurses who have completed an accredited course in public health nursing.

Following the expansion in the public health program, nursing services have developed more comprehensive, well balanced activities, including in certain sections programs of syphilis and pneumonia control, greater stress on teacher participation in school health programs, more complete maternity programs emphasizing nursing care at delivery, postpartum services, and care of the sick in rural areas. The greater number and improved quality of supervisory and advisory nursing services give planned direction to these expanding services.

The National Organization for Public Health Nursing as the professional organization for public health concerns itself with standards in all aspects of public health nursing. It is the center for pooling and interpreting information, and it gives direction to the developments in this field, guiding the advancement in public health nursing through committee reports, meetings, and publications.

By participating in joint activities the Public Health Nursing Section of the American Public Health Association interprets these standards and principles to the allied groups represented in the various sections of the Association. Through this relationship the public health nursing group gains knowledge of developments in other fields, thus aiding the extension and progress in public health nursing services.

Federal Facilities to Expedite Emergency Sanitation Measures*

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THE Ohio River flood of 1937 was the first instance of a major catastrophe in which immediately available federal funds and personnel permitted the expediting of emergency sanitation measures, and in which there was thorough coördination of all federal facilities in connection therewith.

The availability of federal relief appropriations for organized work relief projects in the area affected and the possibility of immediate transfer of these funds, and personnel, to flood emergency activities were conditions which may not and probably will not exist when the next catastrophe of major proportions occurs. In considering the availability of federal facilities, therefore, immediately available emergency funds for labor, materials, and the like must not be included to any appreciable extent. However, trained personnel to assist the state and local health agencies will be available in the future as was the case during the recent flood.

A brief description of the administrative procedures in Washington, with some comments, will indicate that these procedures were the logical and perhaps the best ones to be followed in any major catastrophe. That there was some lag in their establishment is true, as is also the fact that their establishment was due in part to lack of coördination of flood emergency activities in the field.

In any flood emergency several activities must be carried on simultaneously by various agencies. In order to be most effective there should be a clear understanding by each agency of its duties, if overlapping on one hand, or failure to carry out certain functions on the other, are to be avoided. Likewise, where the duties of two or more agencies dovetail, proper coördination is necessary. At certain stages of the emergency certain lines of endeavor temporarily assume greater importance than others, a fact that all agencies should recognize.

The need for delineation of federal activities, as well as proper coördination, was recognized soon after the probable magnitude of the flood was realized.

On Sunday, January 24, at the direction of the President, the heads of the various federal agencies in any way connected with flood emergency activities met at the National Red Cross headquarters. At this first meeting the duties of each agency were determined, as well as the manner in which each could best coöperate with the other. In this coördinated effort the National

* Read at a Joint Session of the Conference of State Sanitary Engineers and the Public Health Engineering Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 5, 1937.

Red Cross was considered as having the same status as a federal agency. Each agency's representative in Washington became the liaison officer between his agency and all others and had power to act for his agency without the necessity of higher approval. Regular meetings were held daily by this group until the emergency was past.

Following each meeting the field officers in the flood area were advised accordingly. Through this emergency committee difficulties arising in the field were quickly settled and good coordination of activities was brought about.

In the future it would appear desirable to assemble promptly such a federal committee whenever a catastrophe may be impending in order that the emergency work may progress as smoothly as possible from the start. While it is important that such a federal emergency committee assemble promptly, it is much more important that similar state committees be organized and be prepared to function much as did the federal committee during the recent flood.

As soon as it was evident that the flood was to reach extraordinary proportions an engineer officer of the Public Health Service was assigned to each of the state health departments in the flood area to coöperate with them. This was promptly followed by the assignment of all available engineers in the Service to flood duty. At the same time arrangements were made hurriedly by the Public Health Service to furnish biologic supplies as needed.

At the meeting of the federal agencies on Sunday, January 24, the Works Progress Administration requested that Service engineer officers be detailed to act as technical advisers in connection with sanitary work carried on by that organization and also to act as liaison officers between the WPA and the state and local authorities. Under certain limitations Civilian Conservation Corps personnel was made available to the Public Health Service by the Army for sanitary work. Immediately after the meeting the engineer officers assigned to state headquarters were informed as to their duties as technical advisers and liaison officers in connection with sanitary work.

It was also arranged that Service medical officers would act as liaison officers between the National Red Cross and the state health authorities. Medical officers were promptly assigned to the various district headquarters of the Red Cross.

With this arrangement there was a close " tie-in " between the state health departments and the federal agencies engaged in the health and sanitation work which is believed to have contributed to the rapid progress of the work with relatively little confusion.

It was evident at the start that some confusion existed in the supplying of biological supplies. A Service officer was therefore placed in direct charge of this work. He was in touch with all of the possible sources of biological supplies and was able to have them supplied with the least amount of trouble.

It was thought that some difficulty might arise because of the demand for chlorine and chlorine compounds, and a somewhat similar scheme was set up under one of the engineer officers. It was found, however, that the chemical companies had the field well covered and this service was not necessary.

It was realized that as the flood waters began to recede trained sanitary engineers would be needed to supplement the state forces and to act as technical advisers to the WPA district administrators. It was rather essential that such engineers be trained in state health department procedure, since no training and little or no

supervision could be given prior to their employment or while they were on the job. It was also essential that, to be of greatest assistance, these additional engineers be in or near the flood area ready for call. This group was recruited from the state health departments of states adjoining the flood states. Each of the state health officers was called by telephone and asked if he could furnish engineers from his staff and how many. The selection was left to him. Where men were urgently needed at the time of the call he was requested to get them off by the next train. The men taken on were made Collaborating Sanitary Engineers in the Public Health Service and paid a small salary in addition to the regular travel and subsistence allowance for government employees. Under this arrangement no financial loss was suffered by these volunteers and thus there was no incentive or desire to return home before their services could well be dispensed with.

At all times there were engineers on the call list ready for prompt departure to any area in which they might be needed.

This plan worked so smoothly and efficiently that it is questionable if it could have been improved upon. The time elapsing between the call to the state health officers and the departure of the men was only a matter of 4 or 5 hours, even though some requests for personnel were made after 10 P.M.

In addition to the 25 engineers from the Public Health Service assigned to the states affected, 37 were obtained from state health departments, 3 from one city, and 1 from a county, a total of 66. One consulting engineer with health department experience volunteered his services and was added to the force.

It has been suggested that a reserve corps of sanitary engineers be established who would be available on call for emergency duty. Under the law it is possible for the Public Health Service to offer reserve commissions to engineers, but not possible, however, to call such reserve officers to duty for training at regular intervals.

At first thought it would appear desirable to have a reserve corps to supplement the regular corps of the Public Health Service in times of widespread disaster. There are, however, disadvantages which would appear to outweigh the advantages. One advantage claimed would be the rapidity with which the reserve corps could be mobilized. Theoretically this would be the case while actually it probably would not. Certainly mobilization of any group could not have been more rapid than was the case during the recent disaster when the state health officers designated their assistants who could, and would, go.

With a reserve corps there would of necessity be different grades with different rates of pay. During an emergency the work of all would be substantially the same. Attempting the same work with officers of different grades and rates of pay is not conducive to efficiency. Reserve officers on active duty would receive only a mileage allowance while in a travel status. This allowance would have to cover all of their travel and subsistence expenses. The distance travelled by any reserve officer would be relatively short, and his mileage allowance small; hence he would find, after the first few days, that his expenses were being paid by himself. This would not contribute to either efficiency or willingness to remain until the officer's services were no longer needed.

These and other reasons make it undesirable to attempt to establish a reserve corps for occasional disaster emergency duty.

In order that emergency sanitation measures may be carried out rapidly

and efficiently in any catastrophe such as a major flood there are required labor, supplies, equipment, and transportation, in addition to properly trained technical personnel. These must generally be obtained through other agencies than the health departments. It is desirable therefore that all agencies, both federal and state, promptly organize a committee which will define the activities of each agency and coördinate these activities in such a manner as to promote efficient performance.

In the field of sanitation the Public Health Service might well be considered the source from which the state health departments would draw technical personnel necessary to supplement their own forces, the Public Health Service to draw upon the states not affected for additional personnel when its own becomes exhausted. In addition to assisting the state health department the engineers furnished by the Public Health Service would act as liaison officers between any federal agencies engaged in sanitary work and the state health authorities and also act as technical advisers to such federal agencies.

Discussion

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THE general coördination of federal facilities for emergency sanitation measures in effect during the Ohio River flood of 1937 has been outlined by Mr. Tarbett. That they could be improved upon in some respects is doubtless true but that they worked with reasonable efficiency and promptness over an extensive area is also certain. So far as the observations from those of us in the field could determine, the extent of coöperation with state and municipal authorities was quite complete.

The general plan of the Public Health Service, in so far as the sanitation activities were concerned, was to:

1. Assign one of its sanitary engineers to each state affected by the flood to collaborate with the chief engineer of the state and through him make available federal facilities for sanitation operations.
2. Be prepared to meet all reasonable requests for emergency engineering and scientific personnel submitted by the field sanitary engineers.
3. Establish only broad policies of procedure and rely upon the field directors to employ measures best suited to handle the particular problems encountered.
4. Remove so far as possible administrative restrictions that might tend to delay immediate action.

There are 3 principal classes of assistance needed in emergency sanitation work that can, to a large extent, be planned for in advance. These are:

1. Directing and scientific personnel
2. Emergency labor
3. Materials, supplies and transportation

Sanitary engineering personnel and other professional assistance was generally adequate and promptly available as a result of the action of the state health officers in placing members of their forces at the call of the Public Health Service. The men selected were trained in state sanitation activities and quickly gained the confidence of local authorities in the areas to which they were assigned.

Emergency labor was generally readily obtained from federal organizations but, as Mr. Tarbett points out, such a reservoir of assistance may not be always at hand. Planning for such emergency help in future disasters would seem to be a function of state

and local agencies. It should be possible for states to work out feasible arrangements with state and county welfare departments through which labor could be quickly supplied and paid. Definite plans for the rapid assembly and assignment of sufficient labor for the protection and reëstablishment of the essential public services would materially lessen disaster losses. A well organized and trained reserve corps of labor foremen designated for particular duty on emergency call within the state for each county or other unit would be of especial value. Periodical relief of such workers is also a prime essential as is also provision for their remuneration. An emergency fund for such purposes might be established or arranged for through suitable legislation or at least authority granted for use of the regular state allotments to spending agencies with the promise of reimbursement. The designation of some one state official for the management and arbitrary control of such emergency funds would probably be advisable.

Obtaining necessary materials and supplies quickly is generally a difficult procedure in times of disaster. Federal agencies were particularly helpful during the 1937 flood, especially the Works Progress Administration because of its well organized purchasing department, throughout the inundated area. There are, however, definite restrictions imposed upon federal expenditures. Here too state and municipal governments might give thought to plans for ascertaining sources of essential emergency equipment and perfecting methods for their procurement when needed. Established purchasing authorities, if empowered to act with the minimum restrictions in times of disaster, could avoid wide confusion and indiscriminate and duplicate buying. An essential of such a centralized procurement agency is the prompt establishment of a representative with adequate assistance at the scene of the disaster, and with adequate authority to act. The close coöperation of such an agent with federal organizations that may be engaged in emergency relief measures is an obvious advantage.

Transportation facilities are generally disrupted in any extended catastrophe. Highways to the affected area are likely to be destroyed or rendered impassible, railroads are equally vulnerable, and other methods of transport affected. As a result our highly specialized systems of food distribution are upset and essential supplies are difficult to obtain. Here again careful planning could alleviate much distress in the early periods of disaster. Certainly the water and sewage treatment plants should have ample reserve supplies of essential chemicals, fuel, and standby power always available to meet any reasonable, unforeseen requirement. Standing arrangements with bus and truck owners for emergency use of their rolling equipment would insure the prompt movement of essential sanitary supplies.

In general, it is believed, the individual states coöperating with county and municipal authorities could, with profit, give consideration to the development of plans for the putting into force of emergency sanitation measures and the reëstablishment of sanitary services disrupted by flood and other disasters within their boundaries. The present provision of emergency labor, supplies and materials under competent direction are essential parts of such a program.

Scarlet Fever Control*

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TO determine what assurance of clinical protection the 5 standard injections of scarlet fever toxin offer a person if originally Dick positive, the attack rate among immunized persons should be compared with the attack rate among persons known to be Dick positive but unimmunized, and both groups should be studied over an identical time.

On March 12, 1934, the Milwaukee Health Department adopted the procedure of the Scarlet Fever Committee for Dick testing persons over 18 months of age, and the subsequent immunization of those showing a positive reaction. Opportunity has been afforded to observe the result of this work covering a time during which the incidence of scarlet fever has been exceptionally high, reaching epidemic proportions in 1934 and 1935. In 1934 there were given and read 15,642 Dick tests, of which 10,500, or 66 per cent, were positive. Among these Dick positive reactors 1,769 received no toxin for immunization, while 6,497 received in 1934 either a standard 5 dose course or as many doses as they elected to receive. None of these subsequently received any artificial immunization. The 5th dose of toxin was received by 3,914 persons, of whom 3,532 had a re-Dick test and appeared for reading. Of these, 240, or 6.9 per cent, were positive and 183 received a 6th dose (5th dose repeated).

Table I shows the relationship between the positive Dick reactors of 1934, the amount of toxin in doses received and completed in 1934, and the incidence of scarlet fever following completion of the course of immunization. All cases have been followed through March 12, 1937.

TABLE I

Positive Dick Reactors Developing Scarlet Fever

Dosage	*Total*	*Developed S.F.*	*Case Rate Per cent*
0	1,769	226	12.77
1	682	42	6.16
2	462	21	4.55
3	765	21	2.74
4	674	6	0.89
5	3,731	33	0.88
6	183	2	1.09

Among Dick positive reactors there is a progressive decline in the percentage developing scarlet fever, from

NOTE: Throughout this paper the term scarlet fever is used to represent this disease with rash, as the clinician ordinarily reports it. Only a small percentage of the scarlet fever cases reported to the Milwaukee Health Department are *scarlatina sine eruptione*. The relationship between immunization and "scarlatinal sore throat" will be discussed in a future paper.

* Read before the Epidemiology Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 6, 1937.

12.77 per cent in the unimmunized group to 0.88 per cent in the 5 dose group. Over 3 years the case rate was more than 14 times higher in the former group than in the latter. The case rates for the 4, 5, and 6 dose groups closely approximate each other.

In order to determine whether the immunity derived from toxin is lasting, Table II is presented. In it the groups from Table I are divided into yearly periods to show the time of development of scarlet fever after the Dick test or the last dose of toxin.

TABLE II

Positive Dick Reactors Developing Scarlet Fever

		Scarlet Fever 1st Year		Scarlet Fever 2nd Year		Scarlet Fever 3rd Year	
Dosage	Total	Total	Case Rate Per cent	Total	Case Rate Per cent*	Total	Case Rate Per cent*
0	1,769	147	8.31	46	2.84	33	2.09
1	682	21	3.08	11	1.66	10	1.54
2	462	9	1.95	6	1.32	6	1.34
3	765	13	1.70	5	0.66	3	0.40
4	674	4	0.59	2	0.30	0	0.00
5	3,731	14	0.38	11	0.30	8	0.22
6	183	0	0.00	1	0.50	1	0.50

*Case rate percentages have been corrected for the number presumably developing immunity during each preceding yearly period because of contraction of scarlet fever.

The advantage which the various dosage groups have over the no dose group during the first year wanes when compared for the 2nd and 3rd years. For example, while the ratio of case rates for the no dose and 5 dose groups is nearly 22 to 1 for the 1st year, it is only 9½ to 1 during the 2nd and 3rd years. At first glance it appears that the immunity diminished greatly in the 5 dose group toward the beginning of the 2nd year. While it is possible that many of this group who lost their immunity did so within a year, the above figures would require that over 50 per cent did so. It must, however, be remembered that the no dose group table is corrected only for those presumed to have developed immunity in each year through contraction of scarlet fever. In reality, many of the unimmunized Dick positive reactors developed immunity spontaneously through sub-clinical attacks of the disease. The theory of latent immunization through sub-clinical infection is strongly supported by observations of Zuger [1] and Gordon *et al.*[2] To evaluate the influence of latent infection on the comparative figures it would be necessary to retest these same unimmunized positive Dick reactors each year. Immunization through sub-clinical infection would exert its greatest influence in the 1st year during which scarlet fever was prevalent in epidemic proportions.

By comparing case rates for the various dosage groups with the no dose group for the 2nd and 3rd year, no waning of immunity is detected for the 3, 4, or 5 dose groups, while definite decrease is apparent for the 1 and 2 dose groups.

DICK TESTING OF PERSONS WHO HAVE HAD SCARLET FEVER

Dick tests were done on individuals who had recovered from scarlet fever. Only cases were considered in which the diagnosis had been verified by one or the other of two health department contagious disease diagnosticians. Table III shows the results of the

TABLE III

Positive Dick Reactors After Recovery from Scarlet Fever

	Total	*Positive*	*Negative*	*Per cent Positive*
Dick tested during 1st year after recovery	225	29	196	12.9
Dick tested during 2nd year after recovery	478	76	402	15.9
Dick tested during 3rd year after recovery	212	40	172	18.9

testing when done within the 1st, 2nd, and 3rd years following recovery from the disease.

There are 3 per cent more positive reactors during the 2nd year after recovery than during the 1st year, and 3 per cent more during the 3rd year than during the 2nd year. This rise in percentage of positive reactors strongly suggests that some individuals who have acquired active immunity through an attack of the disease subsequently lose it.

The 12.9 per cent shown to be positive when tested within 1 year after recovery from scarlet fever suggests that either a large percentage of persons do not develop immunity from a single attack of the disease, or if the percentage developing immunity is nearly 100 per cent, then over 12 per cent lose their immunity in less than 1 year. Perkins,[3] in returns from 1,016 cases collected from January, 1924, to April, 1927, reports 14 per cent positive Dick reactors in persons of all ages with a history of a past attack of scarlet fever, while returns from 735 cases Dick tested in the convalescent stage showed only 8 per cent positive Dick reactors.

In Milwaukee in 1934, 5,965 cases of scarlet fever were reported, and of these 68 developed scarlet fever again following recovery but before December 31, 1936. One case developed within 1 month after recovery and could therefore be classified as a recrudescence rather than a second attack. In more than 75 per cent the diagnosis was verified in each attack by one of two health department diagnosticians. Within the first year after recovery, 37 second attacks occurred; within the second, 18 attacks; and within the third, 13 attacks.

If the percentages, shown in Table III to remain Dick positive after an attack of scarlet fever, indicate true susceptibility, it becomes possible to anticipate the number of persons who should have had second attacks within yearly intervals. The number of anticipated cases should approximate the number which actually developed each year. Table IV shows these calculations.

Comparison of the anticipated and actual numbers of cases during these yearly intervals shows the actual numbers equal, on an average, only 60 per cent of the anticipated number.

Ando, Kurauchi, and Nishimura[4] have shown that the filtrate of the broth of hemolytic streptococcus cultures contains two substances capable of causing skin reactions. One is relatively heat labile and the other relatively heat stable. Their work, together with that of Toyoda and Futagi,[5a] indicates that the thermolabile portion is exotoxin. They were able to prepare this in relatively pure form and concluded it is the true toxin of scarlet fever, contains no nitrogen, and never causes allergic reactions. On the contrary, they concluded that the thermo-stable portion is endotoxin, is

TABLE IV

Anticipated and Actual Number of Scarlet Fever Cases Among Those Who Had a Previous Attack of Scarlet Fever

	1st Year	2nd Year	3rd Year	Total
Number having had one attack of scarlet fever	5,965	5,924	5,903	
Per cent Dick positive after scarlet fever	12.9	15.9	18.9	
Number susceptible	769	942	1,116	
Per cent susceptibles attacked *	8.31	2.84	2.09	
Number anticipated cases	64	27	23	114
Number actual cases	37	18	13	68

* Refers to percentages of known Dick positives attacked within various 12 month periods taken from Table II.

identical with nucleoprotein obtained by extraction of the washed bacteria, is capable of acting as an allergen, and often produces allergic skin reactions in persons immunized against streptococci or scarlet fever.

Toyoda, Moriwaki, and Futagi [5b] state that skin tests on children who previously had scarlet fever gave 32.7 per cent positives with their Dick toxin while with heat-labile exotoxin only 3.4 per cent were positive. The discrepancy in numbers of anticipated and actual cases of scarlet fever shown in Table IV can be explained on the basis of the 12.9 per cent reacting positively within 1 year after recovery. This figure is probably about 40 per cent too high and the error is probably due to positive tests on persons immune to scarlet fever but showing allergic skin reactions to the nucleoprotein in the test material. The 3 per cent yearly increase in number of positive reactors is apparently reasonably accurate.

As shown in Table V, the percentage of cases having second attacks of scarlet fever only slightly exceeds the percentage of negative Dick reactors contracting scarlet fever, and also only slightly exceeds the percentage of positive Dick reactors who contracted the disease after receiving the standard 5 doses of toxin.

This, taken into consideration with the percentage of persons who show a falsely positive reaction as already mentioned, hardly seems to justify as a public health measure the Dick testing and immunization of persons giving a bona fide history of a previous attack

TABLE V

Scarlet Fever Among Dick Negatives, Artificially Immunized Dick Positives, and Those Who Have Had the Disease

	Total	Developing Scarlet Fever	Per cent Developing Scarlet Fever
Primary negative Dick tests in 1934—no immunization	5,142	48	0.93
Positive Dick in 1934 received 5 doses of toxin in 1934	3,731	33	0.88
Positive Dick in 1934 received 5 doses of toxin in 1934—negative re-Dick in 1934	3,292	28	0.85
Had scarlet fever in 1934	5,965	68	1.12

of scarlet fever. A pure or nearly pure exotoxin for testing would make such work less objectionable if it is undertaken.

VALUE OF DICK TEST IN CLINICAL PRACTICE

1. The Primary Negative Dick Test

In 1934 there were recorded 5,142 primary negative Dick reactors. As shown in Table V, of this number 48, or 0.93 per cent, developed scarlet fever before March 12, 1937.

The explanation may lie in faulty technic in giving the test or its interpretation. In Milwaukee every effort has been made to follow exactly the technic as outlined by the Dicks. If the human element of error entered, it is believed it would be introduced to at least an equal degree by others doing the same work under similar circumstances.

Does the reactive power of the skin vary at times in the same individual? Eddy and Mitchell [6] have shown this to occur occasionally for scarlet fever toxin in measles and in the febrile stages of such diseases as pertussis, poliomyelitis, and varicella. This must play a neglible rôle in this series.

The work of Hooker and Follensby [7] on "heterologous" toxins has demonstrated the existence of at least two thermo-labile hemolytic streptococcus toxins. This work deserves serious consideration as it may explain the occurrence of scarlet fever with rash in persons previously tested with the strong toxin A producing Dick ii strain but later infected with organisms such as the "Cook" strain which is a powerful toxin B but weak toxin A producer.

If, however, immunity as indicated by a negative Dick test can be lost when acquired actively and naturally by an attack of scarlet fever, or actively and artificially by toxin injections, why may it not be lost in a small percentage of cases when acquired actively and naturally through a subclinical attack of the disease?

2. The Negative re-Dick Test

Table V shows that of 3,292 persons who had a negative re-Dick test after receiving the 5 standard doses of toxin 0.85 per cent developed scarlet fever within 3 years. Among the group of 3,731 persons who completed the 5 dose series, only 0.88 per cent contracted the disease, in spite of the fact that 199 were not retested, and of 240 showing a positive retest only 183 received a 6th injection. Moreover, of the 183 who received a 6th injection, 2 contracted scarlet fever for a case rate percentage of 1.09. One of these 2 had a negative re-Dick test after the 6th dose of toxin. Thus, the practical advantage of re-Dick testing has been negligible.

In this connection the work of Hooker and Follensby [7] on "heterologous toxins" must again be considered. They estimate only some 2 or 3 per cent of young adults react positively to a mixture of toxins A and B, and negatively to toxin A alone. Contraction of scarlet fever with rash by a Dick negative person does not necessarily indicate a loss of previously sustained antitoxic immunity but may be due to infection with a strain of organisms producing a "heterologous toxin."

3. The Primary Positive Dick Test

I have repeatedly noticed that some individuals, especially adults, when returning for reading of a Dick test, show an intense reaction involving a large area and having a fairly dark red elevated center. Often a pale pink or dark red indurated area measuring over 1 cm. in diameter is noted. None of these reactions resembles the mild erythematous blush of the true reac-

tion. I have then repeated the Dick test at once, using the test material from another manufacturer. On reading this second test, it is often noted that the reactions are much smaller in size and some of the smaller ones have failed to appear at all.

Ando and Ozaki [8] attribute such reactions to nucleoprotein in the Dick toxin and from the above results it would seem that the nucleoprotein content in various lots of Dick toxin is not constant. Ando, Kurauchi, and Nishimura [4] state "the nucleoprotein solution is able to evoke skin reactions even in a high dilution (1:1,000–1:9,000 dilution)." Ando and Ozaki [8] state "generally speaking the influence the N.P. in the filtrate has on the results of the Dick test is marked when a weak toxin is used in a lower dilution though also the N.P. content of a culture varies with the strain used. Accordingly, a high dilution of a potent toxin should be preferred for the Dick test, but the use of a purified toxin would be preferable."

Using purified toxin and culture filtrate, both standardized on young strongly positive reactors and applying both to persons ranging in age from 6 to 15 years, Ando and Ozaki [8] showed that 31.2 per cent reacted positively to purified toxin and 33.2 per cent reacted positively to culture filtrate. They state "The difference in percentage of positives to both toxins is not so marked considered as a whole, but the difference is rather considerable when the percentage of positives in the higher age groups is considered."

That use of the standard Dick test control will not entirely avoid this difficulty is shown by Green [9] who states "In the present instance abundant evidence has been forthcoming that an apparently identical reaction to crude filtrate in two susceptible individuals may mask considerable variation in their reaction to the separated exotoxin and endotoxin."

Accordingly, it seems that even among school children a small percentage of primary positive Dick reactors are immune to scarlet fever, and that the percentage of error increases with increase in age groups.

4. The Positive Re-Dick Test

When a re-Dick test is positive in an individual who has recently completed a standard 5 dose series of toxin, are we justified in assuming that the person is still susceptible to scarlet fever? As said, a small percentage were probably immune but allergic to the nucleoprotein before the injections were begun. As shown by Toyoda and Futagi [5a] and Ando,[10] the nucleoprotein fraction of the Dick toxin may act as an allergen in some persons so that while they are being immunized they will become allergic to thermo-stable endotoxin. These individuals are also immune to scarlet fever but show a positive re-Dick test.

In studying the results of re-Dick testing in school children in Milwaukee in 1934, it was found that in 12 schools only the test material of manufacturer A had been used and in 8 other schools only the material of manufacturer B.

TABLE VI

Re-Dick Testing of School Children with Test Material of Manufacturers A and B

	Laboratory A			*Laboratory B*		
	Total	*Positive*	*Per cent Positive*	*Total*	*Positive*	*Per cent Positive*
Children retested	1,610	68	4.2	1,153	100	8.7
Over 10 years old	453	28	6.2	321	32	10.0

Table VI shows the results of such re-Dick testing with products of these manufacturers.

Testing was done 2 weeks after completion of immunization. Only children who had received the standard 5 dose course were considered. Product A shows 4.2 per cent positives for all retested, and product B shows 8.7 per cent, while the average of the two is 6.1 per cent. This may account for the variation in percentage of negative re-Dicks reported by different authors. Children over 10 years of age showed 7.8 per cent positive re-Dick tests, a higher percentage than the 6.1 per cent shown by the entire group. The percentage was higher for these older children with each of the two manufacturer's products. Bacterial contamination of the material, with resulting skin infections, cannot be ascribed as the cause of this variation because only previously unused vials of test material were sent to these schools.

While the test material was undoubtedly accurately standardized for its true or thermo-labile exotoxin content the lots of various manufacturers vary as to their nitrogen-containing fraction or nucleoprotein. Veldee,[11] using commercial unconcentrated toxins from several laboratories, shows variation in total nitrogen content. Using his figures, the nitrogen toxin ratio as mg. of nitrogen per 100,000 S.T.D. is 8.93 for product of laboratory F and 6.23 for that of laboratory E, illustrating the variation that may occur.

CONCLUSIONS

1. During 3 years the case rate for scarlet fever was more than 14 times higher in unimmunized Dick positive reactors than in those who completed the standard 5 dose course of toxin.

2. During 3 years the immunity derived from 4 doses of toxin was as effective as that from 5 doses.

3. During 3 years the case rates for scarlet fever were lower in primary negative Dick reactors and positive reactors who completed the standard 5 dose course of toxin than for those who previously had an attack of scarlet fever.

4. During 3 years the practical value of re-Dick testing has proved negligible.

5. A culture filtrate free of, or as near as possible free of, endotoxin is desirable, at least for the purpose of skin testing.

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National Health Conference - A Review

A NATIONAL Health Conference, called by the Interdepartmental Committee to Coördinate Health and Welfare Activities, was held in Washington, D. C., July 18 to 20. This committee was appointed by the President in August, 1935, following the passage of the Social Security Act, "in order that the full benefits of the various federal programs under the Act provisions might reach with minimum delay and maximum effectiveness the individual men, women, and children for whose aid and service the program was brought into existence." This committee consists of Josephine Roche, Chairman, former Assistant Secretary of the Treasury, in charge of the U. S. Public Health Service; Eugene L. Bishop, M.D., Executive Secretary; Arthur J. Altmeyer, Chairman of the Social Security Board; Milburn L. Wilson, Under Secretary of Agriculture; Oscar L. Chapman, Assistant Secretary of the Interior; and Charles V. McLaughlin, Assistant Secretary of Labor.

A Technical Committee on Medical Care has been working for some months under the Interdepartmental Committee. This committee consists of Martha M. Eliot, M.D., Children's Bureau; I. S. Falk, Ph.D., Social Security Board; and of Joseph W. Mountin, M.D., George St. John Perrott, and Clifford E. Waller, M.D., of the Public Health Service.

There were 171 persons invited to participate in the Conference by the Interdepartmental Committee. These persons were invited merely as individuals and for what they might contribute, rather than as representatives of particular groups. The Conference was carefully prearranged with respect to personnel, make-up, and agenda. The presence in large numbers of representatives of the consumers of medical care lent it interesting color and distinguished it from previous meetings of its kind. In addition to the persons formally invited to be present there were approximately an equal number of invited observers who were excluded from participation and discussion, together with members of the press. A classification of those who participated in the Conference may be summarized as follows:

Total number of delegates 171
Delegates having a degree of M.D. 53
Persons identified with
- Public health agencies 20
- Social and welfare agencies 20
- Labor 20
- Journalism 11
- Hospital management and organization 9
- Local, state, and federal government officials, exclusive of public health and hospitals 9
- Industry 9
- Agriculture 8
- Women's organizations 8
- Economists 4
- Educators 4
- Nursing 3
- American Legion 3
- Dentistry 3
- Foundations 2
- Miscellaneous organizations 10

Of the total, some 35 persons were identified with the American Public Health Association as Fellows or members.

This Conference, which was held at the suggestion of President Roosevelt

after considering the preliminary report of the Interdepartmental Committee presented to him in February, 1938, was opened by Miss Roche, as Chairman, who read a message from the President. The President enumerated some of the strides which have been taken by medical science and public health within recent years. He mentioned the extension of public health and maternal and child welfare services under the Social Security Act, the launching of a special campaign to control syphilis, the establishment of the National Cancer Institute, and the use of federal emergency funds for the expansion of hospital and sanitation facilities, the control of malaria, and many related purposes. The President pointed out that, in spite of these steps forward, there is need for a coördinated national program of action. Such a program, he said, must necessarily take into account the fact that millions of citizens lack the individual means to pay for adequate medical care. He stated that the economic loss due to sickness is a very serious matter, not only for many families with and without incomes but for the nation as a whole. He asked that the Conference plan a long-range comprehensive program providing for the most efficient coöperation of federal, state, and local government with voluntary agencies, professional groups, media of public information, and individual citizens.

At the outset, Miss Roche expressed the hope that the Conference might contribute to two ends: (1) a better understanding of national needs in the field of health and medical care; (2) the formulation of policies which will enable the medical and other professions, private organizations, federal, state, and local agencies, and individual citizens to coöperate in efforts to meet these ends.

Miss Roche went on to say that the people of the United States are alert and determined that the frequently difficult but ultimately sure and progressive processes of democracy shall serve all the people and that human conservation is an obligation of government. She pointed out that the findings of the survey show that the gross sickness and mortality rates for the poor of our large cities are as high today as they were for the nation as a whole half a century ago. The average person in a relief family experiences 3 times as many days of disability annually as the average person in the upper income group. One in every 20 family heads in the relief population is unable to work because of chronic disability, as contrasted with only 1 in 250 heads of families with incomes of $3,000 or over. Miss Roche pointed out that, when translated into human reality, the statistics show that 40 per cent of the counties in the United States where 18 million people have their homes have no registered general hospital, and that among 50 million Americans who live in families receiving less than $1,000 income a year, illness and death increase their toll as income goes down, medical care decreasing sharply as need for medical care mounts.

There were addresses by Katherine Lenroot, Chief of the Children's Bureau, Department of Labor, and Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service. There followed a discussion of national health needs and the speakers included Dr. Irvin Abell, President of the American Medical Association; William Green, President of the American Federation of Labor; Dorothy J. Bellanca, Vice-President of the Amalgamated Clothing Workers of America; Mrs. H. W. Ahart, President of the Associated Women, American Farm Bureau Federation, and Dr. Hugh Cabot, Consulting Surgeon of the Mayo Clinic.

The Chairman inquired whether anyone was prepared to challenge the statement of need as made by the technical experts, and there was no response.

The second day of the Conference was utilized for the presentation by the technical experts of a general program of medical care, together with plans for insurance against loss of wages during sickness, a study of hospital facilities and studies of medical care for the medically needy.

In referring to the recommendations from the Technical Committee on Medical Care, Miss Roche pointed out that these recommendations were presented to President Roosevelt in February, 1938, and that it was at his suggestion that the National Health Conference was called. She stated that the Conference was not asked to take formal action on any part of these recommendations. They were put forward merely as a basis for discussion and the Interdepartmental Committee, she said, sought the frankest discussion of the means of improving the health services and medical care of the people of the United States.

THE NATIONAL HEALTH PROGRAM IN SUMMARY

The following represents a summary of the National Health Program as recommended by the Technical Committee on Medical Care to the Interdepartmental Committee to Coördinate Health and Welfare Activities;

A study of health and medical services in the United States indicates that deficiencies in the present health services fall into 4 broad categories:

1. Preventive health services for the nation as a whole are grossly insufficient.

2. Hospital and other institutional facilities are inadequate in many communities, especially in rural areas, and financial support for hospital care and for professional services in hospitals is both insufficient and precarious, especially for services to people who cannot pay the cost of the care they need.

3. One-third of the population, including persons with or without income, is receiving inadequate or no medical service.

4. An even larger fraction of the population suffers from economic burdens created by illness.

In its report the committee submitted a program of 5 recommendations for meeting with reasonable adequacy the existing deficiencies in the nation's health services. Although estimates of the total additional annual costs to federal, state, and local governments were submitted, the committee did not suggest that it is practicable to put into effect immediately the maximum recommendations. Rather it stated the broad problem and possible solutions and contemplated a gradual expansion along well planned lines with a view to achieving operation on a full scale within about 10 years.

Recommendation I—The expansion of public health and maternal and child health services.

The committee recommended the expansion of existing coöperative programs of the Social Security Act.

a. The expansion of general public health services (Title VI). Prevention occupies the first place in this recommendation and increasing federal participation is proposed to promote a frontal attack on certain important causes of sickness and death for the control of which public health possesses effective weapons. In order to strengthen public health organization; to eradicate tuberculosis, venereal diseases, and malaria; to control the mortality from pneumonia and from cancer; and to promote mental and industrial hygiene; an estimate was made of $200,000,000 annually for an adequate program with the proposal that approximately one-half of these increased funds be provided by the federal government.

b. Medical and nursing care of mothers and their new-born infants, medical care of children, services for crippled children, consultation services of specialists, and more adequate provisions for the postgraduate training of professional personnel are included in this part of the recommended program. The objective sought is to make available to mothers and children of all income groups and in all parts of the United States

minimum medical services essential for the reduction of our needlessly high maternal mortality rates and death rates among infants, and for the prevention in childhood of diseases and conditions leading to serious disabilities in later years. A gradually expanding program reaching at least by the 10th year a total additional annual expenditure of $165,000,000 was recommended. Again it was proposed that approximately one-half of the cost should be met by the federal government.

With reference to Recomendations II, III, and IV, the expansion of medical services and facilities, the committee explored the adequacy of services for the sick, the sickness experience of broad groups of the population, and the availability of professional and hospital services for these groups. The committee concluded that the needs for diagnostic and therapeutic services to individuals are greatly in excess of the facilities, even when supplemented by a strengthened program of preventive services as proposed in Recommendation I. The committee found that current practices in the provision of medical services and facilities fall far short of meeting these needs. It took account of personnel and facilities, of financial support of services required by persons who are themselves unable to pay for the care they need, of the sickness burdens of self supporting persons, of methods of paying for medical care, and of assuring income for workers who are disabled by sickness. It concluded that these needs warrant an expansion of medical services and facilities on a broader front than that contemplated in Recommendation I alone.

Recommendation II—The expansion of hospital facilities.

After making a special study of deficiencies in existing hospital and other institutional facilities, the committee was impressed by the increasing part which hospitals play in the health and sickness services. The committee found the hospital accommodations and organizations throughout the country ill adapted to the varying needs of people living under different social, economic, and geographical circumstances. In hospitals offering general care the percentage of beds supported by patients' fees is out of proportion to the ability of the population served to pay, and many general hospital beds are empty a large part of the time. There are too few low cost or free beds to satisfy the needs. There are wide areas—some 1,300 counties—having no registered general hospitals, and many others are served only by one or two small proprietary institutions. Only in large city hospitals have outpatient clinics been developed to any considerable extent. Governmental tuberculosis sanatoria and mental institutions tend to be overcrowded or are otherwise restricted in funds or personnel in rendering the community service for which they should be equipped.

The committee recommended a 10 year program providing for the expansion of the hospital facilities of the nation through the provision of 360,000 beds, including general, tuberculosis, and mental hospitals in rural and urban areas, and by the construction of 500 health and diagnostic centers in areas inaccessible to hospitals. These new hospitals or units would require financial assistance during the first 3 years of operation. Averaged over a 10 year period the total annual cost of such a program, including special 3 year grants for maintenance of new institutions, is estimated at $146,050,000, of which construction would total $110,650,000, and 3 year maintenance $35,400,000.

Recommendation III—Medical care for the medically needy.

Grouped together under this recommendation is the need for persons without income and supported by general relief and, as well, families with small incomes. The committee pointed out that these persons are doubly handi-

capped. They have higher rates of sickness and disablement than prevail among groups with larger incomes. They have lesser capacities to buy and pay for the services they need. Current provision to assist these people is not equal to the need. The committee recommended that the federal government, through grants made to the states, should implement the provision of public medical care to two broad groups of the population. (1) Those for whom government has already accepted some responsibility through the public assistance provisions of the Social Security Act, through work relief programs, or through provisions of general relief and (2) those who though able to obtain food, shelter, and clothing from their own resources are unable to procure necessary medical care. In this way the test of indigency was removed from the requirements for relief. The committee estimated that, on the average, $10 per person annually would be required to meet the minimum needs of these two groups for essential medical services, hospitalization, and emergency dentistry. This part of the program might be begun, it was suggested, with the expenditure of $50,000,000 the first year, gradually expanded until it reached the estimated level of $400,000,000 which would be needed to provide minimum care to medically needy groups. Again the committee recommended that one-half of the total annual cost be met by the federal government.

Recommendation IV—A general program of medical care.

Directing attention to the economic burdens for self-supporting persons created by sickness, the committee pointed out that there is need for measures which will enable such people to anticipate and to meet sickness costs on a budget basis. Summarizing their conclusions, as a result of many studies, the committee stated that the costs of sickness are burdensome more because they fall unexpectedly and unevenly than because they are large in the aggregate for the nation, or on the average for the individual family. Except in those years when unemployment is widely prevalent, sickness is commonly the leading cause of social and economic insecurity. Without great increase in total national expenditures, the burdens of sickness costs can be greatly reduced, through appropriate devices to distribute these costs among groups of people and over periods of time.

In recommending the consideration of a comprehensive program designed to increase and improve medical services for the entire population, the committee pointed out that such a program would be directed toward closing the gaps in a health program of national scope left in the provisions of Recommendations I and III. To finance the program it was proposed that two sources of funds might be drawn upon: (a) general taxation or special tax assessments, and (b) specific insurance contributions from the potential beneficiaries of an insurance system. The committee recommended consideration of both methods, recognizing that they may be used separately or in combination.

Recommending that such a program should preserve a high degree of flexibility, in order to allow for individual initiative, and for geographical variations in economic conditions, medical facilities, and governmental organization, the committee indicated its belief that it should provide continuing and increased incentives to the development and maintenance of high standards of professional preparation and professional service. It was further pointed out that this plan should apportion cost and the timing of payments so as to reduce the burdens of medical

cost and to remove the economic barriers which now prevent the rendering of adequate care.

The committee made clear that in planning for a program of medical care of a magnitude to serve the entire population, this aim must be regarded as an objective to be fully attained only after some years of development. The rôle of the federal government, according to the committee, should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice.

Recommendation V — Insurance against the loss of wages during sickness.

The committee recognized the importance of assuring wage earners continuity of income through periods of disability. While a disability compensation program is not necessarily part of the medical care program, the cost of compensating for disability would be needlessly high if wage earners generally did not receive medical care necessary to return them to work as soon as possible. The committee believed that temporary disability insurance can be established along lines analogous to unemployment compensation and that permanent disability insurance may be developed through the system of old age insurance.

THE COST OF THE PROPOSED PROGRAM

Estimating the maximum annual cost to federal, state, and local governments of Recommendations I, II, and III, with duplications eliminated, the committee estimated that about $850,000,000 of new funds would be required annually at the full level of operation, to be achieved within a 10 year period. This figure, however, was presented primarily as a gauge of need.

The committee pointed out that in proposing Recommendation IV for an adequate general program of medical care, the maximum prospective annual cost would be in the vicinity of $20 per person per year, or no more than is already being spent through the private purchase of medical care. However, in considering the possibility that a national health program more limited in scope than that which is outlined in the entire series might be adopted, it was believed that Recommendations I and II should be given special emphasis and priority. "Summarizing the entire report, the Technical Committee on Medical Care stated its conviction that, as progress is made toward the control of various diseases and conditions, as facilities and services commensurate with the high standards of American medical practice are made more generally available, the coming decade under a national health program will see a major reduction in needless loss of life and suffering and an increasing prospect for longer years of productive self supporting life in our population."

SUMMARIES OF THE CONFERENCE

In speaking over the radio during the Conference, Dr. Thomas Parran pointed out that the Conference was considering large scale measures to deal with the whole problem of health and medical care in the country at large. He emphasized the fact that not only the humanitarian basis of good health was considered but the savings to the nation which will accrue from a more healthful population. He added that the Conference differed in at least two important respects from similar conferences held in the past. In the first place it brought together not only the medical and other professional experts but representatives of labor, the farmers, and other groups of citizens who receive or would like to receive adequate health services and medical care. Dr. Parran quoted President Roosevelt as saying that, while the professional experts can help, nevertheless

the ways and means of dealing with this problem "must be determined with a view to the best interests of all our citizens." Secondly, he said, the National Health Conference is distinguished by the fact that it is intended to lead to action.

It was plain through Dr. Parran's address and many others that the people of the country realize that they are not obtaining the full benefits of modern medical knowledge with its tremendous scientific advances, and with even greater emphasis it was brought out that they are demanding more help and medical service.

Significant among the declarations of Dr. Parran were that, comprehensive and complicated as the whole program may seem, it is in no sense revolutionary. In each of its parts it seeks to do better, more skillfully, more universally for all the people, what is already done to conserve health in some communities or for some people. No radical change in medical practice is contemplated, according to Dr. Parran. He further pointed out that the first concern of the Conference is to reduce the amount of sickness rather than simply to spread the cost of sickness, and he pointed out that in this respect the American Medical Association and the representatives of all consumer groups were agreed. Also in agreement were many who felt that the underprivileged groups of our population who cannot provide good medical care for themselves need help from public funds if they are to have the benefit of medical science.

Charles W. Taussig, President of the American Molasses Co., summarized his own opinion which appeared to be widely shared at the Conference:

> There seems to be a general acceptance at this Conference of the factual presentation of the desperate need for more adequate medical service to the underprivileged. Some opposition, however, has been voiced to a federal subsidy to take up this slack. In other words, as a mass problem the need for a greatly augmented medical service is unanimously recognized, but some of us, unfortunately, hesitate to go beyond the mere recognition of the problem. A reason frequently given for this timidity is that a coördinated attack by the federal, state, and local governments on this problem of proper medical care will in some unexplained way destroy our democratic system of government. I recognize that what we have been discussing at this conference puts democracy to a severe test, for one of the first questions that we must ask of the democratic process is: Can it meet the recognized social requirements of our people?
>
> The American concept of democracy has never carried with it the implication of a changeless political, social, and economic order; yet it has become the habit of a certain group to brand every suggested effort to improve the condition of the underprivileged and to make less cumbersome our governmental processes as being destructive to democracy. Totalitarians recognize such mass problems as we are considering here. They deal with them on a mass basis. But the genius of democracy lies in its ability to reduce the problem of the masses to its component parts of individual human needs and desires, and to solve the problem on that front.
>
> We underestimate the virility of our democracy when we refuse to meet an acknowledged need, not because we do not know how to meet it, not because we lack the resources to meet it, but because we are afraid that some alien political philosophy may creep upon us unaware and destroy our institutions. If democracy in the United States has become such a feeble thing, it can no longer serve us. It is a paradox that the most vociferous vocal defenders of democracy join with Hitler and Mussolini in proclaiming democracy's alleged inability to cope with complex social and economic problems.
>
> Let us remember that democracy is a sword as well as a shield, that its purpose is not only to defend old liberties, but to make new social and economic conquests as well. This Conference presents a magnificent challenge to the democratic process.

Adjourning after 3 days, the Conference adhered to the suggestion made by the Chairman and took no vote. It was announced that the government

Technical Committees would work over the material as presented and the criticisms made during the Conference with the objective of formulating legislative bills suitable for consideration by the Congress, and it was suggested that a similar conference might be called within a few months to consider a definitive legislative program based on these recommendations.

CONFERENCE GLEANINGS

"Public health may well be the next great social issue in this country." Thomas Parran, M.D., Surgeon General, U. S. Public Health Service.

"We cannot attack a 10 billion dollar program with small change." Josephine Roche, Chairman, Interdepartmental Committee.

"Those of us who are concerned with the progress of medical science usually think that the great events of medicine occur only in the research laboratory or the operating room. We are witnessing here in Washington another kind of progress in medicine—an effort to put medical science to work. The National Health Conference may well be the greatest event in medical science which has happened in our time." Thomas Parran, M.D.

"The individual in need is indivisible as to his relief and his medical care." M. Antoinette Cannon, New York School of Social Work.

"This conference will mean further shifting of the center of gravity in this problem toward the consumer." Hugh Cabot, M.D., Rochester, Minn.

"It is indeed futile to increase the demand for better medical and health services without increasing the facilities." Charles W. Taussig, President, American Molasses Company.

"Our studies of the money value of a human life show that, taken as a whole, our human assets are at least five times as valuable as our economic assets." Louis I. Dublin, Ph.D., Metropolitan Life Insurance Company.

"Our purpose is not to create a Utopia but to face and accept at least minimum responsibilities for medical care." Fred Hoehler, Director, American Public Welfare Association.

"The real question for us to face is what is the intelligent, decent, and adequate way to do this thing?" President Frank Graham, University of North Carolina.

"The consumer interest is with the medical profession now. It may not always be." John P. Koehler, M.D., Milwaukee, Wis.

"The prospect of having more people lean for medical care on the broad shoulders of Uncle Sam has been distressing to a considerable number. I would rather have more people lean on the broad shoulders of Uncle Sam for this purpose than on the narrow and cadaverous shoulders of the Elizabethan poor laws. They were not a modern solution." Paul Kellogg, Editor, *Survey Associates*.

"There have been so many surveys of national health needs that, as one mother, I fear that our children will grow up to be unhealthy adults before we as a nation put into effect a sound and adequate health program." Mrs. J. K. Pettengill, President, National Congress of Parents and Teachers.

"Complacency now has no justification. The situation would seem to be too big for the resources of medicine to meet alone." Robert Osgood, M.D., Harvard University.

"In health protection self help is preferable to outside aid; government intervention in medicine is desirable as a last, not a first, resort." S. S. Goldwater, M.D., New York City Commissioner of Hospitals.

"If a wider application of the voluntary insurance principle will produce a readier flow of effective service, the principle is entitled to support." S. S. Goldwater, M.D.

"Medical care should be locally rather than nationally administered. The effective and economical administration of medical aid for the masses by huge federal agencies is well nigh impossible." S. S. Goldwater, M.D.

"Only a few years ago my people—the field workers, the packing house workers, etc.—did not know what it meant to demand that their needs, their lives, their happiness be considered. They were only half Americans with no voice in the government, with no part in planning this democracy. But now these men and women are organized and they have learned how to ask for what they want, how to demand what they need." Florence Greenberg, Chicago.

"I maintain that the first problem for this government is to relieve poverty and I maintain, as one who understands something of the nature of the practice of medicine, that medical care is not the most important

problem before the people of the United States today." Morris Fishbein, M.D., Editor, *Journal of the American Medical Association.*

"It is true that if the economists could show us how to produce and distribute an income equal for the health and other needs of every family, the need for many public health measures would be minimized. The interrelationship between poverty and disease is well known. Disease begets poverty and poverty in turn creates more disease. At the present time, however, our proven ability to prevent disease exceeds greatly our proven ability to control other causes of poverty. . . . Medicine and public health should lead economics rather than follow it. The application of preventive medicine offers the best opportunity to interrupt the downward spiral, to tear out the roots of poverty and the consequences of ignorance by attacking the one most readily preventable fact." Thomas Parran, M.D.

"I propose to recognize the needs which have been dramatized for us, to go home and to recommend to the American medical profession through the *Journal of the American Medical Association* and through the House of Delegates that they do all they can to meet these immediate and pressing needs without sacrificing the standards of medical care which will give the people good medical service." Morris Fishbein, M.D.

"My respect for the medical profession to which I belong is so great that I am sure that the quality of medical care which physicians provide will never depend on the method by which they are remunerated for their services." John P. Peters, M.D., Professor of Medicine, Yale University.

"If all of the groups of the country must help in solving this great problem of medical care, that means that the government will have to do it, does it not? And, really, the federal government is not an invading hostile power that knows nothing about the needs of this country. After all, what is it? It is ourselves, ourselves organized, and surely it is more or less susceptible to our influence." Alice Hamilton, M.D., Consultant, U. S. Department of Labor.

"You may rest assured that in any of the efforts which are made for the betterment of the health care of the people of this country you will have the wholehearted coöperation of the American medical profession." Irvin Abell, M.D., President, American Medical Association.

"The following is a typical case from the National Youth Administration: In a Middle-western industrial city, 1,800 boys and girls were given a thorough physical examination. Forty-three per cent of them were found to be unemployable by private industry because of their physical conditions, but it was estimated that with corrective medical treatment this large portion of youth, who were occupationally handicapped because of physical defects, could be reduced to 8 or 10 per cent." Charles W. Taussig.

"If I may for a moment speak to you as the head of an industrial corporation, I should like to emphasize that the expenditure of $850,000,000 for public health does not frighten business. Business bears a far greater financial burden now, due to our neglect of inadequate health control, than its share of the tax burden will be under the proposed plan. The annual toll of preventable illness measured in terms of money runs into billions. Progressive business will regard an adequate health service as a subsidy to industry—not as a burden." Charles W. Taussig.

"The participation of a labor representative at a conference of this kind to consider national health needs with a view to formulating a national program is in itself a significant departure and an indication of the growing recognition that the problem of health is no longer a private and purely professional concern, but that it is manifestly one of the widest possible public urgency." Dorothy J. Bellanca, Vice-President, Amalgamated Clothing Workers of America.

"In the large cities as well as in the rural areas the low income groups experience sickness and mortality today as if there had been no progress at all during these past fifty years. The results of medical science have reached those who could afford them." Dorothy J. Bellanca.

"There can be no acceptance by the medical profession of any system of medical care which is based on the idea that the well-to-do shall receive one quality of medical care while the farmer, the laborer, and the white collar worker are to be placated with a wider distribution of an inferior medical service." Irvin Abell, M.D.

"Spot maps developed by the Council on Medical Education and Hospitals of the American Medical Association reveal that only 13 counties in the United States are more than 30 miles distant from an acceptable general hospital, and in 8 of these counties there are less than 5 people per square mile of territory." Irvin Abell, M.D.

"According to the method proposed for testing the adequacy of distribution of hospitals in the United States, as presented by

the American Medical Association, one hospital of 10 beds in New York City and one in Chicago would be assumed to meet completely the needs of these communities. Measures of the actual utilization of hospitals are necessary. Otherwise the conclusions are absurd." Professor C.-E. A. Winslow, Yale University.

"The medical profession agrees with all other agencies on the importance of the following objectives: The provision of good medical care for all the people; the development of comprehensive preventive and public health services; the development of appropriate measures to combat specific health problems; and a continuous, orderly improvement of the distribution of medical services and hospital facilities, both by geographic and economic divisions." Irvin Abell, M.D.

"It is easy to say that there are many thousands or millions living in economic conditions where health and happiness are impossible in a democracy as vast as ours, but I would like you to realize that this problem varies not only from state to state; it varies so much in the different counties or townships in each state, that most formulas imposed on our people as a whole would do a great deal more harm than good. It is with this purpose in view, and as a result of the very able address delivered by Miss Josephine Roche at the meeting of the American Public Health Association last year, that the American Medical Association has inaugurated and is pushing to completion a painstaking study of the needs of medical care and the method for their provision in each county in the United States." Irvin Abell, M.D.

"I was interested to hear the president of the great American Medical Association refer to the survey which they are now carrying out. I do not myself feel much confidence in the result because I am not clear by precisely what method physicians are to know about people whom they never see. The people who get no medical care obviously do not crowd the doctors' offices and precisely how they are to arrive at figures which will be more convincing, if perchance we need any figures that are more convincing, is beyond the limits of my slow mind." Hugh Cabot, M.D.

"The day is not so very long gone when the medical profession of not only this but every other country took the general and very benign view that all medical problems were their problems and that the whole problem of sickness and preventive medicine was the problem of the physician. There has been accumulating evidence that the consumer is beginning to wake up to the fact that he has a collateral interest in this problem, that he is the one who is paying the bill, and that he has a right to a very large word in what is done and in how it is done. Here in this Conference for the first time I hear clearly and boldly and bravely and gallantly stated the problem of the medical consumer." Hugh Cabot, M.D.

"It is my firm belief that this Conference marks the ridge of the hill between the old indifference to health as a matter of national concern and a new understanding that health is the first and most appropriate object for national action." Thomas Parran, M.D.

"I think we shall have action on several aspects of our problem because it would appear that at the present time people in general are beginning to take it for granted that an equal opportunity for health is a basic American right. They are thinking just a little ahead of the law makers and even, I fear, ahead of the practitioners of public health and of clinical medicine." Thomas Parran, M.D.

"The social significance of this Conference lies in the fact that for the first time we can be optimistic that action will follow plans." Thomas Parran, M.D.

"The ideal traffic plan is not that which provides a first-aid station at all intersections and streamlined ambulances to carry away the victims of traffic accidents." Thomas Parran, M.D.

"I see in the discussions of this Conference an extraordinarily touching appeal to the medical profession. It has been the boast of the medical profession, and the just boast, and the source of proper pride, that if a woman came with a sick child to an individual physician and said, 'My child is suffering and we want you to care for it,' that he never failed to respond. Now what has happened here this week is that the representatives of millions of men and women in the United States have come to the medical profession as a group and said, 'Our members are sick and suffering and we want medical care for them, and we want means provided by which we can pay.' Is it possible, is it conceivable that that appeal is going to be rejected? I think not." C.-E. A. Winslow, Dr.P.H.

Pending final action by the House of Delegates, "The Association may well abide by the fundamental principles and policies already established. . . .

These principles and policies do not forbid, nor do they seem to contemplate any opposition to, a well considered expanded program of medical services, particularly preventive medical service, when the need can be established. Neither is there any fundamental principle or policy which in any manner opposes aid to the indigent or even to what are called the medically indigent if their medical indigence can be established, provided such aid comes through agencies which will not tend to lower the quality or standards of medical care." Editorial comment on the National Health Conference, from the *Journal of the American Medical Association*.

REGINALD M. ATWATER, M.D., DR.P.H.
Executive Secretary
American Public Health Association

Visual Education—The Oberlaender Trust

VISUAL education in the field of public health has a great future in the United States. There are people in every community who would like to see such work established on a permanent basis, and undoubtedly much progress will be made within the next few years. The Trustees of The Oberlaender Trust have felt that a distinct contribution could be made to this movement by making the experience of the German pioneers available to public health officials in America.

As a first step in this direction, and with the definite objectives of helping to make the general public better acquainted with fundamental questions of health, and of stimulating interest in the founding of health museums in various parts of the United States, the Trust has purchased two large collections of models from the Deutsches Hygiene Museum in Dresden. The first, containing more than seventy separate exhibits, has been placed temporarily in the New York Museum of Science and Industry. The other, a set of thirteen models, has been donated to the Museum of Science and Industry in Chicago. All are duplicates of material in the Dresden Hygiene Museum.

The collection in New York, which is shown under the title "The Exhibit of Man," features a Transparent Man and Miss Anatomy, other models ranging from a blood cell enlarged a thousand times to a figure showing the circulation of the blood through the heart and important blood vessels. Requests have been received for permission to copy the wooden torso showing longitudinal sections of the body and the wooden figures showing the number of calories required by workers in various occupations. Such requests are granted when the duplicates are to be used for educational purposes.

The whole collection from the New York Museum of Science and Industry will be transferred to the World's Fair next year. In the meantime plans are being worked out for a future program to utilize the material in the interests of health education. Dr. Bruno Gebhard of Germany, a consultant on health education who has had much to do with the development of the Dresden Hygiene Museum, is now in America on the invitation of The Oberlaender Trust and the American Public Health Association. He is serving as an adviser to these two organizations and to the Committee on Medicine and Public Health of the New York World's Fair, in connection with health exhibits.

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THE NEW FEDERAL LAWS RELATING TO FOODS, DRUGS, AND COSMETICS

AFTER five years of consideration,[1] the Congress of the United States has finally adopted two important new laws to amend and strengthen the more or less obsolescent Federal Food and Drug Act of 1906. One of these measures, giving the Federal Trade Commission jurisdiction over false advertising of foods, drugs, devices, and cosmetics, was signed by the President on March 21, 1938, to become effective 60 days from that date; the other measure, a new Federal Food, Drug, and Cosmetic Act, was signed on June 25, 1938, and becomes effective one year from that date, except that several sections, including one (Sec. 701) authorizing the Secretary of Agriculture to hold hearings and promulgate regulations for the enforcement of the act became effective on the date of approval of the law. The Secretary is also authorized to designate prior to the effective date food having common or usual names and exempt such food from the requirement of the act, but only for a reasonable time to permit the formulation, promulgation, and effective application of definitions and standards of identity.

Under the terms of the first law mentioned, which is officially designated as Public—No. 447—75th Congress, and is popularly known as the Wheeler-Lea Act, the jurisdiction of the Federal Trade Commission is extended to the advertising of all foods, drugs, diagnostic and therapeutic devices, and cosmetics (except soap) in interstate and foreign commerce, or through the mails. Whenever the Commission believes that any person, partnership, or corporation is engaged in, or is about to engage in, the dissemination of false advertising, defined as "an advertisement, other than labeling, which is misleading in a material respect," the Commission may bring suit in a federal district court to enjoin the dissemination of the advertisement. If the commodity advertised is injurious to health because of its use in accordance with its advertising, or the advertising is intended to defraud or mislead, the advertiser may be haled to court and prosecuted criminally without previous notice. Ordinarily, however, false advertising is regarded as an unfair or deceptive trade practice, with the advertiser subject to a proceeding by the Commission consisting of notice, a hearing, and, if the findings justify it, the issuance of a cease and desist order, which may

be appealed to a federal circuit court of appeals, and finally to the Supreme Court.

In determining whether an advertisement is false, the law states that there shall be taken into account (among other things) not only representations made or suggested by statement, word, design, device, sound, or any combination thereof, but also the extent to which the advertisement fails to reveal material facts. Advertisements of drugs are not deemed false when disseminated only to the medical profession, provided they disclose the formula and contain no false representation of material facts. Publishers, radio-broadcast licensees, and advertising agencies will not be liable for the false advertising of manufacturers and sellers if they furnish to the Commission on request the name and address of the person responsible for the advertisement.

This somewhat drastic law, if reasonably enforced, should have a salutary effect upon the nature of food, drug, device, and cosmetic advertising in interstate commerce, although it seems likely that the law will give rise to much time consuming litigation. It is also unfortunate that there should have been the division of authority between the Federal Trade Commission and the U. S. Department of Agriculture, which has had and continues to have jurisdiction over the labeling and the adulteration of these same products. Not only is this department equipped by training and experience to carry out the necessary administrative duties, but it has adequate laboratory and technical facilities for the purpose.[2]

Under the terms of the new Federal Food, Drug, and Cosmetic Act (Public—No. 717—75th Congress), the adulteration or misbranding of any food, drug, diagnostic or therapeutic device, or cosmetic (except soap) in interstate commerce is prohibited. This act not only gives administrative jurisdiction to the Secretary of Agriculture over devices and cosmetics, which were not included in the law of 1906, but it also provides for injunction proceedings in federal district courts to enjoin adulteration and misbranding of foods, drugs, devices, and cosmetic, as well as providing for the customary criminal actions for violations, and for seizures and destruction by court action of dangerous and fraudulent commodities. In order to carry out the purposes of the act, the Secretary of Agriculture is authorized to promulgate necessary regulations.

Since the law is a lengthy one, and it is difficult to review all of its many specific provisions within the limited space of an editorial, it is suggested that health officals and other interested sanitarians secure copies of the act from the U. S. Department of Agriculture, for careful study.

In general, however, it may be stated that the new law contains comprehensive and somewhat broadened definitions of adulteration and misbranding of the various products, so as to include in the former category not only the presence of poisonous or deleterious substances that are injurious to health, but the absence of valuable constituents, the substitution of inferior materials, and, in the case of drugs, substandard quality, purity, or strength. Under misbranding is included not only false and misleading labels, but improper imitations of labels of other products, misleading containers, and in cases of foods for special dietary uses, failure to give information as to vitamin, mineral, and other dietary properties. Special labels are required on drugs containing habit-forming narcotics, with adequate directions for use and suitable warnings on such labels. In the section on cosmetics there is a provision that coal-tar hair dyes must be labelled with a

caution against their use for dyeing eyebrows and eyelashes, and the statement that such use may cause blindness.

An important section of the law requires that new drugs can be introduced in interstate commerce only after filing an application, with submission of evidence and data, and the securing of a permit from the Secretary. Refusal by the Secretary of such a permit may be appealed to the federal courts. If this provision of the law had been in effect a year ago, the series of unfortunate deaths from the use of an elixir of sulfanilamide probably would not have occurred.

The new law does not cover meat and meat food products, which are still subject to the Meat Inspection Act of 1907, as amended. It also keeps in effect various other existing laws, such as the Butter Standards Act of 1923, the Filled Cheese Act of 1896, the Filled Milk Act of 1923, and the Import Milk Act of 1927.

The Federal Food, Drug, and Cosmetic Act of 1938, as sponsored by the late Senator Royal S. Copeland, represents a noteworthy advance over its 32 year old precursor, the Federal Food and Drug Act of 1906, as occasionally but inadequately amended. The enforcement of this law after June 25, 1939, should do much to aid in the protection and promotion of public health in this country.

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THE AIRPLANE AND YELLOW FEVER

THE rapid multiplication of airplanes of all types and the tremendous increase in their use for personal transportation has necessarily been a matter of great concern to all nations. A number of reports have been made and efforts are under way to bring about international agreements and methods for inspection of passengers and for disinsectization of the planes. The increase in the use of planes is shown to some extent by a report [1] of the examinations made at Khartoum: 287 in 1935; 667 in 1936; and 364 up to July 2, 1937. Indeed Khartoum is now a modern city and the crossroads for airships coming from many different directions. Its airport is the stopping place for night for all of the great lanes. Apparently this gives an abundance of time for disinsectization and inspection, which requires a longer or shorter time, according to the arrangements of the interior and the number of insects which it is necessary to capture. At least one-half hour is required for inspection. The work of the Custom officers and of the Postal service should be delayed until the planes have been cleared of insects. It is interesting to note that in the Sudan until 1936 the insecticides employed were "Flit" and "Shelltox," widely used in this country, but since then a cheaper mixture made on the spot is used, which has the added advantage of being practically noninflammable.*

Mosquitoes are found chiefly in the compartments occupied by passengers, but also in the baggage compartments, especially in those planes in which these are reached by a separate door at the side. So far no mosquitoes have been

* Extract of pyrethrum..... 5.8 per cent
Essence of citronella..... 2 per cent
Tetrachloride of carbon..... 49 per cent
Kerosene . . . . 43.2 per cent

found in the new hydroplanes which have been put in service since April, 1937. For over 3 years, only 3.5 per cent of planes examined at Khartoum have harbored mosquitoes. Of these, 79 per cent are those coming from the East. The great majority of mosquitoes found so far have been Culex and only 10 Anopheles.

An elaborate report [2] covers the sanitary conditions of airplane navigation in the French Colonies and Mandates. So far everything has gone remarkably well, in spite of the fact that the international agreement of April, 1933, has not been ratified by France and consequently not promulgated in her Colonies. Most of the airports of the French Colonies are in regions where yellow fever has been known or is quiescent, and in which there should be provisions to protect against the disease. It is pointed out that there are considerable areas of dispersion of yellow fever virus in South America and in Africa, and great possibilities of spread if there is introduction of carriers or the insect vector by airplanes.

Vaccination against yellow fever seems to be the ideal, but so far it is inapplicable to those populations living in these areas. It is held that in order to give complete security it should be carried out in laboratories, be controlled frequently, and revaccination done where the tests show insufficient protection. Such conditions are not applicable to masses.

One has only to look over the various airplane routes as summarized by Inspector Sorel to realize the possibilities of spread of disease by planes. The French use four great lanes in common with several other countries in reaching their colonies and mandates. Joining these great highways are sidelines, practically all of which connect with areas in which yellow fever might exist.

America [3] is not at all free from some of the dangers due to rapid travel by airplanes. Our Public Health Service is represented in the International Office of Public Hygiene, and has always been awake to the situation. At Miami, steps have been taken to guard against the importation of the *Aedes aegypti,* and researches are being made on better methods for disinfestation of airplanes. A special corps is being instructed to study the *Aedes aegypti* in the cities of the South, and it is held that no airport of entry should be established within 20 miles of a city which shows a high index for Aedes.

In August, 1937, a living *Anopheles maculipennis* was found in a Chinese Clipper arriving at Honolulu from Alameda, Calif. Hence, instructions have been given to the Pan-American Airways and to the Medical Officer of the Quarantine Station at San Francisco that a complete fumigation be done at departure by an operative of the Service.

The constant travel of passengers from the United States to South America and back again, which can take place within a week, shows the necessity of the greatest care in our contacts with those of our neighbors on the South within whose borders yellow fever is found.

The greatest menace in the world today, and perhaps the one which is being thought of most, is the possible infection of India by yellow fever. The climate is suitable and apparently all it needs is the introduction of the virus. There we have several hundred million people who have never been exposed to yellow fever, who exist on a low plane of living, and who, as far as we can judge, would be very susceptible to the disease, yet planes of the Imperial Airways have flown from the Sudan to India in less than 48 hours.

We have been forced to abandon the "simple man-*Aedes aegypti*-man epi-

demiology," though it still yields perfect results in many areas. The virus of yellow fever has been transmitted in the laboratory by several species of mosquitoes found in Africa and South America other than the *Aedes aegypti,* and, in 1935, we were shocked by the discovery of "Jungle Yellow Fever," perhaps the natural and more permanent form of the disease.[4]

Aedes from both Egypt and India have been found susceptible to laboratory infection. Opportunities for the introduction of yellow fever into India certainly exist, and are multiplying constantly.

This imperfect sketch founded on an elaborate report by experts must demonstrate to everyone the necessity of international coöperation in the establishment of airports, their freedom from mosquitoes known to carry disease, the regulations concerning passengers, the disinfestation of airplanes, etc. All of this applies with double force to airports of entry.

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NEW LIGHT ON OLD BELIEFS

THE announcement of the discovery of the tubercle bacillus in 1882 was followed immediately by experimental studies of various sorts, notable among which were those of two of the great scientists of the veterinary profession.[1] Nocard in France and Bernard Bang in Copenhagen, reported respectively at the first Congress on Tuberculosis in 1888, and the Congress of Hygiene, 1891. Both were concerned with the possible danger of the transmission of tuberculosis to human beings by eating the flesh of tuberculous cattle.

Nocard injected large quantities of tubercle bacillus into the veins of cattle. Within a few hours, the blood was absolutely free from the germs which had been introduced. In a few days, the many organisms which had been caught in the muscles had been destroyed or, as he said, at least put in such a condition as to be of no danger—they had lost their power of multiplication as well as their virulence. Bang drew blood from twenty cows with advanced tuberculosis and after defibrination, injected it into the peritoneal cavities of 38 rabbits and 2 guinea pigs in doses of from 10 to 18 c.c. Only two of the inoculated animals showed positive results and the cow whose blood had proved virulent was affected by an acute miliary tuberculosis following an injection of tuberculin.

Without discussing further the many experiments which have been done, it may be said that as early as 1883 experiments had shown that in the immense majority of cases, the danger of infection was confined entirely to the tuberculous lesions and that the blood and the juice from the muscles in particular only exceptionally carried tubercle bacilli.

It has, of course, been recognized for many years that in probably every case of tuberculosis in cattle which went on to death, there are moments when through the disruption of a tubercle, germs are thrown directly into the blood, but, as in the experiments quoted above, the blood rapidly gets rid of the germs which have been thrown into it.

This has been the teaching for many years and the results have proved the practical correctness of the experimental findings.

Recently (1936) studies have been brought forward which must lead to some revision of our views. Nieberle [2] has investigated the pathogenesis of those forms of cattle tuberculosis in which there is fresh, dry, infiltrating caseation, a good example of which is what he calls "mastitis caseosa." In these cases, the udder shows large areas of caseation surrounded by an area of hyperemia and an infiltration extending widely. Sections show tubercle bacilli in large numbers at the periphery and they enter the damaged blood vessels readily. A tuberculous "bacillemia" is demonstrable under the microscope, corresponding to that which has been mentioned as occurring in advanced cases. Similar changes occur in the lymph nodes and, like the lesions in the udder, may liberate enormous numbers of the bacilli into the general circulation. In 13 such cases, tubercle bacilli were found in the meat. The author calls attention to the fact that just such changes occur in rapidly caseating lobular pneumonia in cattle. In 18 of 21 such cases, examination of the meat showed the presence of tubercle bacilli, and similar results have been obtained in caseating tuberculosis of the adrenals, kidneys, uterus, ovaries and serous membranes.

In summary, tubercle bacilli were found in the meat in 69 of 82 cases. Both cultural and animal inoculation were positive in 26 cases, animal inoculation alone in 39, and cultural examination alone in 4. In every case, the bovine type of organism was found.

In discussing the importance of these findings, Nieberle says that there are 2 main types of tuberculosis in which occur what he calls "fresh blood infection": (a) miliary tuberculosis in children; (b) acute miliary tuberculosis in adults. In children, generalization occurs from a primary focus which is often easily found, while in adults, it is seldom demonstrated. Both of these types are, however, found in cattle, and in 15 of 23 cases, representative of both of these types, tubercle bacilli were found in the meat by bacteriological examination. When the generalization occurs late in the disease, the lymph nodes are not often involved. When it occurs early, they invariably show tuberculous changes.

Nieberle insists that in examination of meat for tuberculosis, the qualitative character of the tuberculous lesions should be more carefully studied, and he considers this point more important than the quantitative distribution. For example, a small area of dry caseation with marginal hyperemia is more important from the health standpoint than widely distributed lesions of a productive nature, owing to the fact that the former is able to give rise to what he has termed the "fresh blood infection." He holds that the whole idea that tuberculosis of the related lymph nodes indicated tuberculosis of the muscles and of the bone-marrow is incorrect, and the latter can arise only from hematogenous infection and indicates a tuberculous "bacillemia."

However, the greatest protection for the human race lies in proper cooking. Only where such meat is eaten under-done or raw as in tartar sandwiches does danger exist. No doubt more careful inspection along the lines indicated will be of advantage, but even accepting the new findings, as we do, we doubt if the danger to human health is extremely acute. We again emphasize, however, the great protection of proper cooking.

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SAMUEL M. CRESWELL

WORD has just been received of the untimely death of one of Tacoma's finest and most useful citizens and one of the most promising young physicians in the field of public health administration. Dr. Creswell, who has served as Health Officer for Tacoma with a remarkable record of accomplishment which has attracted national attention, was killed in an automobile accident just outside of Seattle. This tragedy is a new bit of evidence of the peril which stalks our crowded highways. A truck made a sudden turn across the highway and into it plunged the vehicle in which Dr. Creswell was a passenger.

American public health loses a promising pupil. A fatality is a deep tragedy to the household and in this case should stir to action the thinking minds in public health and health education who too complacently observe the ever increasing death rate due to automobile accidents. Forty thousand lives in a single year snuffed out by this preventable cause. In 1937 typhoid fever in 93 American cities with a population of 38,885,435, claimed but 318 victims. In the same year in these cities there were but 568 deaths from diphtheria. How insignificant are these figures when compared with death on the highway.

While it is not suggested that health officers become highway patrolmen, it is incumbent upon public health administrators to assume a leading rôle in the conservation of human life, whatever be the immediate cause of death. Recognition of the numerical importance of deaths from accidents is evidenced by the inclusion of this item in the schedule of the annual health conservation contests. May we suggest Dr. Creswell's untimely death as a circumstance about which to construct a program of public education.

In 1933 Tacoma was awarded a free survey by the American Public Health Association. At that time this city ranked twenty-third in its health rating among American cities. It will ever be a credit to Dr. Creswell's memory that within a few years Tacoma appeared among the cities of honorable mention, and in 1937 was awarded first place for its syphilis program—first on the list among all the American cities to enter this, the first, of the syphilis contests.

To Mrs. Creswell and her two daughters the American Public Health Association extends its heartfelt sympathy. To the public health profession may we express the hope that Dr. Creswell may not have died in vain. Human sacrifice to the whims of the careless driver should be eliminated.

PUBLIC HEALTH EDUCATION*

Again in October—Health education will have its full share of time and attention in the 1938 Annual Meeting of the A.P.H.A. in Kansas City.

There will be regular sessions, luncheons, and a dinner meeting.

There will be an extensive headquarters with a fine new line of health educational materials, and the opportunities for individual and group consultation.

There will be the ever recurring and frequently valuable lobby sessions.

There will be a bigger and better display of scientific exhibits.

There will be an hour by hour showing of motion pictures.

Because of the abundant space, we welcome at headquarters demonstrations and displays not possible in New York.

Now is the time to start planning that you may be more sure of getting to Kansas City.

"Fairy Tales and Neuroses"—Under this heading *Health News* of New York State Dept. of Health (March 7, 1938) discusses a *London Times* editorial on the supposed unsuitability of many fairy tales for the child audience. It all grew out of objections to the "horror" scenes in "Snow White and the Seven Dwarfs."

Our contribution to the discussion is a report on the fears of a 5 year old boy and a 7 year old girl. A friend had taken the children to see "Snow White." After reporting on the picture to their mother, a slight, somewhat tiny person, she expressed a desire to see the picture. "But Mother, you must not go. You would be scared. You are too small."

A State Helps the Locals—The New Jersey Tuberculosis League, 15 E. Kinney St., Newark, accompanies the weekly issue of its *News* with ready made press material prepared for easy localization.

At the present time this takes the form of "Story of the Week," the reproduction of a recent local news story, with blank spaces in which local facts or statistics may be filled in by any other county organization.

A recent story titled, "N. J. Clinics File Report," based on clippings received from Ocean and Cumberland Counties. Here is the copy as sent out on a single mimeographed letter size sheet:

New patients attending tuberculosis clinics in the state during 1937 totaled 19,657, according to an annual report released recently by the New Jersey Tuberculosis League and forwarded to the ..... (organization). ..... County had ..... new cases. The statistics are compiled with the coöperation of the State Department of Institutions and Agencies and the New Jersey Department of Health.

Of those attending clinics last year in ..... County ..... per cent were diagnosed as having tuberculosis, ... per cent were non-tuberculous, and ..... per cent were listed for observation. The last group included childhood type tuberculosis, contact cases among children and adults, and children who would not immediately be diagnosed and who are kept as active clinic cases because of physical or clinical signs.

The death rate from tuberculosis last year was 48.1 per 100,000 for the state.

* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

..... County's rate was ..... There were ..... deaths from tuberculosis in ..... County during 1937, ... of whom were Negroes. New cases of tuberculosis reported to the State Health Department were .... of which number .... were reported from ..... (organization) chest clinics. According to the report ..... school children were tuberculin tested in the schools of ..... County, ... were positive.

..... holds its last clinic for the summer season ..... (date). Attending a chest clinic does not mean that any individual necessarily has tuberculosis; on the contrary it is one of the best ways of finding the person does not have it.

When Addressing Mail—If you wish to reach a particular individual in any organization it is the safer plan to note his title or his name *above the name of the organization.*

If you wish to label a letter as "personal" or "confidential," or to request that it be forwarded or not forwarded, it is by far the safer plan to *make the notation above the remainder* of the address.

In many cases if such special instructions are written in the lower left corner they are overlooked in the handling of quantities of incoming mail.

Grammar for Writers—May Lamberton Becker, "The Reader's Guide" of *New York Herald Tribune Books* (every Sunday), is wise and widely informed on the choice of books. A correspondent

. . . asks for books on English grammar and composition that will answer almost any question that may come up in preparing copy for the printer.

Here is Mrs. Becker's reply:

This inquirer already owns *A Manual of Style* (University of Chicago Press), the *New Handbook of Composition,* by Edwin C. Woolley (Heath), a useful book of reference in correcting technical errors; and the *Advanced English Grammar* of G. L. Kittredge and Frank E. Farley (Ginn); for dictionaries he has *Webster's New International* (Merriam) and the *Shorter Oxford English Dictionary,* two volumes (Oxford University Press). Make a note of these; they are well worth putting into a permanent reference library of this sort, and indeed form one by themselves.

For additions to this I suggest as a beginning a new book expressly for people who are inexperienced in sending stuff to the printer and will find this practical for that purpose: *Manuscript and Proof,* by John Benbow (Oxford University Press). I know printers who swear by the *Authors' and Printers' Dictionary* (Oxford) of F. H. Collins, a little book to help proofreaders and others, with a full list of abbreviations. Another brief book with much in it, just out, is H. A. Treble's *A B C of English Usage* (Oxford). Even smaller than this is the *Author's Book* Macmillan issues for 50 cents: this is packed with sound information, one of the elementary kind needed by most people beginning to send out manuscripts. I don't see how the list of dictionaries this inquirer already has could be bettered, but such a library is not complete without the provocative *Modern English Usage* of H. W. Fowler (Oxford). Its immediate effect is to put one into the state of the centipede who debated which foot came first; Fowler makes a mistake seem so awful that you stop writing for fear you may make one. As you rapidly come back on the rebound, ready to fight the King's English single minded, the result is all to the good.

Why Not More about National Agency Publications? — We agree heartily that more about the aids and publications offered by national agencies should be given in these pages. We realize that only a imited audience actually learns of new publications, posters, slides, and other materials issued by the nationals. It is economically impossible for the nationals to mail announcements to all who might be concerned.

Moreover, even to reach those most directly interested, more than a single approach is needed. Long and careful observation shows that many important service announcements are lost after delivery by mail. In all too many state and local agencies distribution or circulation of service information among staff members is inadequate. And fre-

quently the printed or mimeographed statements are so small or inconspicuous in appearance that they are neglected.

Furthermore, various staff members of state or local agencies have an interest in health educational materials even though their primary job is in another technical field. Among the staff members of agencies, nationals in all health fields, state and locals, are the people who answer letters, who meet people in their offices or in field visits, who are asked about health education. Neither health workers nor lay readers are discriminating when looking for information. Whoever they happen to write to, or whoever they are accustomed to address for information or advice on other specialties are likely to be asked about health education materials. For example, even the New York correspondents of local banks are sometimes requested to get information for use in Keokuk or Kalamazoo.

Then outside there is a vast unnumbered audience of people who want to help in one way or another, or who might help. Among these are people who write for periodicals, students in schools and colleges, leaders in all the varied non-health groups which do something in health education. They go to libraries, they may call on local health workers, they write to women's magazines and to various people in the larger cities.

These paragraphs lead to two suggestions. The first is that health workers generally keep in reasonable touch with the whole field of health, the health education programs for the various special fields, and the sources and nature of available health education materials. The more we all help to play the other fellow's game, the stronger all will be.

The second suggestion is that the national agencies and other national sources of health education materials help this department to make a continuing and fairly complete record of all new material. The *Journal* is to be found in so many public, college, and school libraries, and of course in the offices of state and local health agencies. With full coöperation in recording new materials we have at least one fairly permanent source of information available at one or a number of places in every sizable community.

It seems to be up to the nationals to make this service all that it might be.

A periodic checking of mailing lists is important. Not to cut out waste addresses, but to insure the inclusion of useful addresses. Our experience is that such addresses do get lost from mailing lists.

Many Pictures—Some Words—See 88 story telling pictures, accompanied by a "sound track" of 88 pages, each with a line of text or several lines, as may be needed. In *Land of the Free,* by Archibald MacLeish. Harcourt, Brace and Co., New York, N. Y.

A poet weaves pictures and words into a tapestry picturing thoughts and lives of many people.

STATE TB. BULLETINS

Michigan's *Health,* with a fairly "modern" layout of its 2 outside pages, gives the last page to an "editorial" (with no capital letters).

New Jersey's *N.J.T.L.* News, in its weekly one legal cap page (printed stock heading) carries news from the counties and announcements of plans and helps, usually in paragraphs less than 6 lines long.

The most intimate of all the state house organs is *Flashes,* the mimeographed issue of the New York State Committee on Tuberculosis and Public Health. And *Flashes* gives more than others in the way of little helps and

hunches for the every day jobs of city and county workers.

Ohio Public Health gives most of its first cover page to a well displayed quotation. One from Osler in June, 1938.

Wisconsin's *Crusader* "Questions and Answers" column prompts a query as to why this feature is not more common.

MAGAZINE ARTICLES

See "Why 'Magazine Articles'?" on another page to learn some of the reasons for publishing this partial list of articles on health topics.

"To my unborn Son," by T. Sucrue. *American Magazine*, 250 Park Ave., New York, N. Y. Jan., 1938. *25 cents*. A letter from a father picturing contrasts between childhood conditions of the father from those of the expected son, as to health and otherwise. An interesting device.

"Becoming a Mother Is Too Often a Needless Rendezvous With Death," by Hazel Corbin; picture of a father's clinic class; "Mobilization for New York's Battle Against Syphilis," by Dr. Thoe. Rosenthal; "Account Payable on Presentation," by Jacob Goldberg (venereal disease costs). *Better Times*, 44 E. 23d St., New York, N. Y. June 6, 1938. *35 cents*. Many illus.

"Japan Invades China With Drugs," by M. Lester. *Christian Century*, 440 S. Dearborn St., Chicago, Ill. May 11, 1938. *15 cents*. How the drug traffic is being fostered!

"Feet First," by H. Lees. *Collier's*. June 25, 1938. Care of the feet.

"Key to Lockjaw," by J. D. Ratcliff. *Collier's*. July 9, 1938. Services made possible by the "biological-laboratory" horses; how serum is produced and distributed.

"Looking You in the Eye," by H. Lees. *Collier's*. June 11, 1938. How the eye works; what may go wrong. "Fascinating gadget, the eye."

"Make Safety Pay," by D. Lindley. *Collier's*. March 26, 1938. "You can't scare people into taking care of themselves on the highway. Why not try offering a reward?" Rochester's answer is described.

"That Child's a Problem," by L. McCorky. *Collier's*. May 21, 1938. "But he needn't be." Here is the answer.

"Death to Food Fallacies." *Consumers' Guide*, Dept. of Agriculture, Washington, D. C. Nov. 29, 1937. "Here are a few false, foolish, or half-true ideas about nutrition to unload from your pack of prejudices."

"The Healing Knife," by George Sava. *Cosmopolitan*, 57th and 8th Ave., New York, N. Y. July, 1938. *25 cents*. Autobiography of an anonymous surgeon.

"Mellon Institute Is Scientific Cradle of Industrial Discoveries: Its scientists now turn to fight widespread and dreaded silicosis." 2 pages. *Life*, 330 E. 22d St., Chicago, Ill. May 9, 1938. *10 cents*.

"A motorist's nightmare," depicted by Rockwell Kent (1 page); "The Traffic Problem: Its Best Solution Lies in Foolproof Highways" (1 page); "After 100 Years American Roads Are Only Half as Fast as the Cars Traveling on Them" (2 page picture diagram); "Traffic" (2 pages showing types of accidents and the people who cause them); 6 pages of safer streets and highways. *Life*. July 4, 1938.

"From Stout to Slim." *Look*, Des Moines, Ia. May 24, 1938. *10 cents*. 2 pages of famed reducers: Hutton, Talley, Whiteman, etc.

"If You Take It Easy, You Can Enjoy Life after 50: A Health Guide for the Middle-Aged," by Dr. Morris Fishbein. 2 pages of pictures good to be made up into an illustrated folder. *Look*. June 21, 1938. Also "What Are Your Chances for a Happy Marriage?" Includes:

"6. *Are You Preparing Yourself for Mar-*

riage (or have you already done so) by reading carefully at least two good books on marriage? (Three points.)"

"By discussing marriage problems with your family doctor or some well informed persons other than your parents? (Two.)"

"Doing nothing to inform yourself about marriage? (One point.)"

These two pages suggest a new form of presentation quite unlike typical, sometimes stodgy, health advice printed matter.

"Young Britain Learns the Perils of Auto Traffic" (a page of teaching devices); "Your Feet . . . Things You Should Know about Them" (2 pages); "The Folly of Fireworks" (2 pages); "Bernarr Macfadden: Building Bodies Built His Millions" (2 pages); "What Happens when You Sit in a Draft" (1 page); "How to Stay as Slender as You Are" (2 pages). *Look*. July 5, 1938.

"Science Helps the Police Detect Drunken Drivers" (2 pages); "Plastic Surgery" (3 pages). *Look*. Aug. 16, 1938.

"They're Not Playing Today" (children injured by automobiles); "They Breathe Their Medicine" (new facilities for medication by nose and throat). *Look*. Aug. 2, 1938.

"Medicine's Misalliance," by James Rorty. *Nation*, 20 Vesey St., New York, N. Y. June 11, 1938. *15 cents*. Reviews various manifestations of "medical care" turmoil in and out of A.M.A.

"The Health of the People: What Social Workers Should Do about It," by John A. Kingsbury. *Social Work Today*, 6 E. 46th St., New York, N. Y. June, 1938. *15 cents*.

"My Back Is Killing Me," by Maxine Davis. *Pictorial Review*, 57th and 8th Ave., New York, N. Y. July, 1938. *10 cents*. "Backaches—what brings them on, how to prevent them, what to do when we have them." Also "Hypersensitive or Allergic Children," by Drs. Fishbein.

"The Miracle of the Iron Lung," by T. Mahoney. *Rotarian*, 35 E. Wacker Drive, Chicago, Ill. July, 1938. *25 cents*.

"Little Doc," by Frazier Hunt. *Saturday Evening Post*. April 23, May 7, May 14, May 21, May 28, 1938. The life story of Dr. Dafoe.

"Yellow Jack Breaks Jail," by Victor G. Heiser, M.D. *Saturday Evening Post*. May 21, 1938. Yellow fever, from early New Orleans, today, and in the future.

"I Saw a Resurrection," by M. Kienast. *Saturday Evening Post*, July 2, 1938.

Why "Magazine Articles"?—Why give space for lists of articles on health topics to be found in current general and special magazines? Because we have an idea that the material will be useful both inside and outside the health department or association.

"What do you think of that article in such and such magazine?" is a question put to many health workers. The lists help to anticipate that question. A group of staff members might report on different articles. Notes as to errors or good qualities of the articles could be attached to copies placed in reference files or in the public loose leaf collection.

What *Collier's* or *Saturday Evening Post*, *Life*, or *Look* says to many people has a significance all of its own. So that it seems worth publicizing such articles in several ways: listing on the bulletin board . . . noting in the house organ . . . distributing mimeographed lists to the staff . . . making lists available to any who may ask for them . . . supplying lists to teachers, many of whom will be glad to learn of especially good articles, and will wish to know what articles can be trusted . . . bringing to the attention of staff members articles which contain good talking points on subjects which enter into the current program of the organization.

Other uses of the listed material include reprinting of some articles for health agencies, or by them. More reprinting of articles and picture pages might be done to advantage.

The magazine material carries suggestions for health education. The topics or the titles may help. The types of pictures, and ways they are used may suggest how some of our own material can be put up to look less like health "education." (Remember what many people think of "educational" motion pictures, and "educational" radio programs.)

STATE DEPARTMENT BULLETINS

Arizona Public Health News carries this statement on its front page:

"The Welfare of the People is the Supreme Law."

Connecticut Health Bulletin (June, 1938) listed "reference books of value to persons doing laboratory work on water and sewage samples," and

"Current scientific journals which contain more up-to-the-minute information of value to persons making laboratory examinations than do text books or reference books."

Connecticut Health Bulletin once a year carries one leaf, scored for easy tearing out, which says:

"If you wish your name to be retained on the mailing list for the Monthly Health Bulletin please sign on reverse side, tear off this page, return at once." (We wonder how many of these sheets are returned?)

Florida Health News carries on its back page a silhouette map of the state with this message:

Watch This Map: it denotes the progress of County Health work in Florida. Each white dot stands for a full-time county unit."

Indiana's *Monthly Bulletin* runs cartoons, with a dozen or fewer words of conversation, headed "Uncle Doc."

"New Activities of the Massachusetts Dept. of Public Health" is the theme of the Jan.–Mar., 1938, issue of *The Commonhealth*, Massachusetts Dept. of Public Health. The 86 pages include the Division of Adult Hygiene, Postgraduate Extension Courses, Training of Lay Readers, New Materials in Health Education, etc.

A weekly feature of *New York State Health News* is a shrewd, folksy monologue headed "'Dr. Jones' Says—."

Ohio Health News makes good use of carefully selected quotations in addition to good original matter. Ohio may attempt to crowd too much good copy into the 4 weekly pages. The small type makes it look a bit heavy to the reader.

Oregon's *Weekly Bulletin* and North Carolina's *Health Bulletin* are among the state bulletins which publish book reviews. A good idea for wider use?

The *Wisconsin State Board of Health Bulletin* frequently reprints health editorials from newspapers and other periodicals. Under "With the Wisconsin Editors" more space is given to such material than in any other state house organ.

BOOKS AND REPORTS

Occupational Disease Symposium—*Chicago: Northwestern University Medical School,* 1938. Planograph copy, 86 pp., paper cover.

This symposium was held September 27–28, 1937, in Chicago, and followed recognition by Northwestern University of the increasing prominence which industrial disease has come to occupy in the field of general medicine. The university established its department in this field in 1936. Full facilities were placed at its disposal, with arrangements for presenting findings to the medical officers of interested industries.

Exhibits were shown by the Chicago Municipal Tuberculosis Sanatorium as well as a shadow-box display of nearly 60 chest roentgenograms by Dr. Hollis Potter. Dean Irving S. Cutter acted as general chairman. The papers presented concerned: "The Rôle of Allergy in Industry," by Dr. Samuel M. Feinberg; "The Rôle of Allergy in Industrial Dermatoses," by Dr. Marion B. Sulzberger; "The Healthy Chest and the Modifying Influences of Silicosis and Silicosis with Infection," by Dr. Eugene P. Pendergrass; "Some Phases of the Pathology of Silicosis," by Dr. Leroy U. Gardner; "Industrial Solvent Exposures and Their Control," by Warren A. Cook; "Some Recent Developments in the Field of Industrial Solvents," by Dr. Alice Hamilton; and "Industrial Lead Poisoning," by Dr. Robert A. Kehoe.

The banquet session provided Introductory Remarks by Dean Cutter, a paper on "The Prevention of Occupational Disease," by B. C. Heacock, and a closing paper on "The Future of Industrial Medicine," by Dr. Morris Fishbein.

The titles of the papers, and the prominence of the names of the authors give ample evidence of their importance and authoritative sources. Many interesting points are contained in the discussions. Several of the papers are followed by bibliographies. The proceedings of this symposium form one of the most recent comprehensive collections, and should be of interest to physicians and industrial establishments as well as to hygienists in general.

EMERY R. HAYHURST

Life and a Living—*By Committee for the Care of the Jewish Tuberculous, Inc. New York: Altro Work Shops, Inc.,* 1937. 65 pp. Price, $.35, paper, $.50, cloth.

With a preface by Dr. Kendall Emerson and a concluding address by Louis I. Dublin, Ph.D., on the occasion of the 21st anniversary of the Altro Work Shops, Part I is devoted to the "Cure" of Tuberculosis, and Part II, to Industrial Convalescence. There are a number of photographs and charts.

The basic concept of the Altro Work Shops is that medical care of the tuberculous can be effective and enduring only when it combines social work at the sanatorium, care of the family in the home, and intensive care after discharge, which must, of course, include a rehabilitation program. It is essentially an industrial rehabilitation program. Instead of the age-old advice, "find some light outdoor job" (which jobs are practically nonexistent), the plan has been to place

the worker in the Altro Shops under close medical supervision which permits activity correlated with safety to the worker and his surroundings. The plan is in some respects similar to the Papworth Village Settlement, Cambridge, England, which has been so ably promoted by Sir Pendrill Varrier-Jones for a number of years.

The Altro Shops have served 10,000 patients and their families in the 23 years to 1936. This report reviews the organization of the original committee, the clinics, the difficult adjustments necessary, and the plan of financing. A city garment work-shop in place of industrial farm colonies was decided upon. Patients came from many occupations but were trained by expert garment makers. The shops turned out more than 500,000 shirts at contract rates for the U. S. Navy during the war. The output is sold on value and not on sentiment. At present, hospital orders represent about 69 per cent of the business, hotels and restaurants 18 per cent, industry and others 13 per cent. High piece-rates are paid.

A two story brick building with a sun roof, especially designed for the purpose, accommodates 135 patients. It contains many labor-saving devices and represents a total investment in land and building of about $190,000; in equipment and stock of $83,000; and clear assets of $81,000. Will Irwin once remarked that Altro was the only place he knew that used a time-clock to keep people from working. All patients are expected to stay at the shop the full day and not to work elsewhere. Vacations are granted and everything possible is done to restore the tuberculous to health. Many return to their former trades. While some must remain for years, others are "cured" in a few months' time. One chart shows that, of earlier patients, 41 per cent were well and working 10 to 20 years after discharge; another, 80 per cent after 6 months to 10 years. Many originally had positive sputums. During 21½ years patients earned in wages an aggregate of $1,472,000. Many other interesting data are given. As Dublin says in his address, "The results speak for themselves."

EMERY R. HAYHURST

Teaching for Health—*By Marguerite M. Hussey, Ph.D. New York: New York University Bookstore*, 1938. 312 pp. Price, $2.75.

This book considers primarily the conduct of the program of public education in such a way as to provide healthful experiences for the child and the application of the principles of general education to instruction in the field of health.

Following a discussion of the historical approach in the development of health education methods, and definitions of health, health education, and health objectives, one finds such titles as: Leadership Organization of the Activities Program for Health, Studying Out-of-School Life, Studying School Life, Studying the Individual, Home-School Coöperation, Technical Teaching, and Printed Materials. There is a brief chapter on the measurement of results and one on units in teaching for health.

The book contains an extensive argument for putting junior and senior high school health teaching in the hands of the teacher of physical education together with a very brief consideration of the other possibilities. The author warns against too extensive injection of health content into tool subjects and dangers which exist in using dramatization, modelling, drawing, and other activities to motivate health practices. She emphasizes the importance of basing health instruction upon the immediate health needs of the pupil, but says little about the relationship of health education to the essential public health

needs of the community. The author considers methods at all levels of education, but there is, perhaps, somewhat more emphasis upon the secondary than upon the elementary or college level.

The book is interestingly written, particularly those phases which have to do with the healthful conduct of general education and the needs of the individual child. Perhaps the reader may differ slightly with some of the generalizations such as: "Good health enables the octogenarian to get as much zest out of life as the adolescent," "All this means that the school must be responsible for the health education of the home as well as of the learner . . ." "The person with varied interests is the happy person, the contented person," . . . "Ideally, there should be a bowel movement after every meal . . ." These disagreements will not be serious, however, and the book is interesting and useful.

C. E. TURNER

Disease and the Man—*By Roger F. Lapham, A.B., M.D. New York: Oxford University Press,* 1937. 143 pp. Price, $2.00.

The author views with alarm the apparently persistent swing of the physician's pendulum toward science at the cost of leaving the patient as a human being too much out of the dual equation. In the good old days the family physician had very few scientific crutches on which to hobble along toward the cure of disease, but he was compelled to know a great deal about his patient. In present-day practice of medicine the physician is under such constant strain to keep up with the advances of his profession scientifically that he is prone to neglect the human beings who constitute his clientele as such.

The book is an attempt to get the pendulum to swing back in reasonable measure toward the patient. The wise physician, and by implication, the one who more than makes both ends meet, has the happy faculty of steering satisfactorily between the entities disease and patient. Six of the 12 chapters of the book elucidate technics on how the physician may capture, hold, and direct the patient while curing the disease.

This is a book primarily useful to medical students, teachers in medical schools, to physicians who may feel themselves a bit weak in blending human relations with science in medicine. It sticks to the subject of how to better private practice. It has not a single paragraph on the burning questions of the hour, "state medicine," "socialized medicine," "medical trade unions," etc.

W. W. PETER

Modern Ways With Babies—*By Elizabeth B. Hurlock, Ph.D. Philadelphia: Lippincott,* 1937. 347 pp. Price, $2.50.

The first three years of life are included within the scope of this readable and comprehensive book. Its purpose is said to be "to bridge the gap between the scientific investigator and the parent." In this it succeeds quite well.

All books on the care of babies of necessity deal with about the same subjects, though with varying emphasis. This one, as might be expected from the fact that the author is a psychologist, is at its best in the chapters having to do with the baby's problems in acquiring good habits and emotional control. The need of incentive and opportunity is stressed wisely and more fully than is usually done. Especially interesting chapters are devoted to babyhood emotions, intellectual growth, becoming socialized, and discipline. The book ends with a discussion of personality.

There is a good list of suggested readings and an apparently adequate index.

On the whole, this is an excellent

common sense aid to the intelligent mother, sufficiently detailed and resourceful without any irritating dogmatism. MERRILL E. CHAMPION

Atlas of Skeletal Maturation (Hand)—*By T. Wingate Todd and Associates (1926–1936). St. Louis: Mosby,* 1937. 202 pp. Price, $7.50.

In opening this interesting volume the reviewer is impressed immediately with its quality as to selection of paper, type, arrangement of material, and excellent illustrations. It is easy to see even upon casual examination that an enormous amount of work has gone into the production of this volume. Dr. Todd gives due credit to a host of colleagues and assistants who have collaborated with him over the past 10 years in making this study possible.

The skeletal maturation of the hand is illustrated by a large number of roentgenographic plates set up as "standards." Each plate is thoroughly documented with explanatory notes, and references are given to basic material. The whole presentation is highly technical and must be interpreted in terms of the standards and technics laid down in the introductory chapter on maturation. One is struck with the magnitude of the undertaking and the difficulties inherent in the interpretation of such a large mass of data with so many variables.

The book is the outcome of studies which have been frankly experimental from the beginning. The selection of the group of children, the working out of technics, the statistical handling of material, and the final establishing of standards for comparison are unique.

It should be noted that the investigators have submitted themselves to a great deal of self criticism in the attempt to harmonize subjective and objective data. Standards have been arrived at by considerable sifting of material. The anatomical descriptions may be accepted as they stand as the work of a competent anatomist. Where Todd and his collaborators have challenged the traditional viewpoint on growth, development, and maturation is in the interpretation of their roentgenographic records as "standards" of maturation in relation to health fluctuations of the individual. It is to be desired that others equipped to carry on similar investigations will adopt tentatively the standards laid down in this atlas to determine if other series of measurements confirm the conclusions reached by the author of this intriguing volume.

Abt in his *System of Pediatrics* has pointed out that Thomas Morgan Rotch as early as 1907–1910 called attention to the value of the roentgen rays in delineating the "small bones of the wrist as a basis for an anatomical index of growth in relation to the 'somatic' as opposed to the 'chronological' age of the child." Todd and his collaborators have carried this forward in differentiating growth and maturation and in indicating the factors which enter into the maturation process, thus affording a basis upon which better standards may be erected. RICHARD A. BOLT

Mental Hygiene for Nurses—*By Elizabeth Lee Vincent, Ph.D. Philadelphia: Saunders,* 1938. 263 pp. Price, $2.00.

The increasing emphasis on mental hygiene and the appreciation of the value of mental hygiene principles have been calling for the publication of just such a book as this and that it should have been done so readably and so authoritatively in non-technical language should make it a "must" book for every nursing library and for every nurse.

It would be difficult to select one chapter or section for special commendation as the same high standard is maintained throughout.

As indicated by the chapter headings a large part of the book is applicable to all young people, whether student nurses or students in any other educational course as well as to young people whose student days may have ended. Being addressed particularly to nurses, however, it is unlikely to be read by many other student groups much as it is desired to place such a book as this in the hands of all students in our educational institutions.

The value of the book is enhanced by the questions for study and discussion at the end of each chapter, most of which require the student to consider her own problems, attitudes, and reactions.

A carefully selected bibliography suitable for nurses and students generally is appended to each chapter and a complete index is also provided. A thoroughly excellent and exceedingly useful book. G. H. STEVENSON

Les Epidemies et l'Histoire—*By Albert Colnat. Paris: Editions Hippocrate, 7, rue des Grands-Degres,* 1937. 191 pp. Price, $1.35.

The author begins with a few well considered remarks on the influence that microörganisms of disease have had on history. Especially have epidemics left their mark. The suddenness, extent, and violence, with the sense of helplessness which they evoke in a stricken community, lead to the most extravagant and unreasonable actions. Even today there are those who regard them as the vengeance of an offended God.

The great epidemics of the past are reviewed in order, beginning with those which afflicted the Jews and are told of in the Bible; next those of the Roman Empire are considered, and, after that, those of the Middle Ages. In this section particularly we have a good description of the rat and its dangers, also the Hundred Year War, with its direful effects.' The fourth section deals with modern times. The author describes the discovery of America and the pandemic of syphilis. He credits to the Spanish historians the idea that the disease was carried to Europe by the sailors of Columbus who had contracted it in Haiti. The fifth section considers the wars in which Napoleon took part, and introduces to us Baron Larrey. The last section brings us to the present day and considers the epidemics of the World War.

The author calls attention to the fact that this struggle brought into practice many of the best discoveries in military hygiene. The confidence of the soldier in the Medical Department grew greatly. On the one hand he was sustained in battle by his patriotism and his confidence in the precision of modern arms; on the other, by the thought of the provisions for his comfort and treatment behind the lines.

While we know that such great epidemics as have marked wars in the past are no longer possible, their rôle in history has not come to an end, but we can confidently hope that the day is not far when all of the known diseases will have disappeared from the earth.

The book is well written and, as far as we are able to judge, authentic. It is abundantly and excellently illustrated. While it does not reveal any historical facts which were unknown, it is none the less an excellent presentation.

MAZŸCK P. RAVENEL

Public Works Engineers' Yearbook, 1938—Including the Proceedings of the 1937 Public Works Congress held at Atlanta, Ga., Oct. 4–6, 1937—*Published by the American Public Works Association, 850 E. 58th Street, Chicago, Ill.,* 1938. 459 pp.

In addition to the more detailed discussion of selected problems of current interest to public works officials, this report contains a review and appraisal

of events and developments in all phases of public works engineering. Of interest to sanitary and public health engineers are the articles concerning water works practice, sewage treatment, and refuse collection and disposal.

In water works practice there was observed an increased use of pretreatment to reduce filter loads, the use of coarser sand sizes, more universal adoption of filter surface washing, the construction of all-steel tank filter plants, expedients for reducing condensation in filter plants, and various appurtenances designed to assist operators and promote better handling of plants. During the year two large cities built and operated water treatment plants for industrial water supplies.

More sewage treatment plants using the activated sludge process were built than were the settling tank-trickling filter type of plant. The Imhoff tank plant also appears to be supplanted by plain sedimentation tanks and separate sludge digestion. Improvements were noted in treatment plant mechanization, utilization of sewage sludge gas, and the training of treatment plant operators by state health boards.

Refuse collection and disposal was marked by improved collection vehicles with covered bodies and low loading heights. Incineration of garbage and rubbish is gradually supplanting inadequate dumping areas.

In conjunction with these subjects, descriptions are given of the Birmingham (Ala.) industrial water supply and the Atlanta (Ga.) sewage disposal system and refuse incinerator.

F. J. MAIER

Pneumonia and Serum Therapy—*By Frederick T. Lord, M.D., and Roderick Heffron, M.D. New York: Commonwealth Fund,* 1938. 148 pp. Price, $1.00.

This handbook appeared first in 1936 under the sponsorship of the Commonwealth Fund. This revised edition makes its appearance 2 years later, contains important new information concerning dosage and results of serum therapy for the various types of pneumonia, and discusses the use of the newly developed antipneumococcus rabbit serum. The authors, both of whom have been active in the Massachusetts Study of Pneumonia Control, are eminently qualified to write on the subject.

Especially interesting is the chapter on serum reactions and methods of prevention. The authors take the position, now rather generally accepted, that attempts to desensitize allergic patients is of uncertain value and should not be too heavily relied upon.

Lord and Heffron recommend that antipneumococcus serum be always given in divided doses. There is now a tendency in some clinics to give serum in one dose, but in the opinion of the reviewer, while this may be good practice in experienced hands, the recommendation for divided dosage is a safer procedure for the general practitioner.

The authors report 1,043 cases of Type I pneumonia treated with serum during the first 4 days of the disease with a death rate of only 13.9 per cent. It is interesting in this connection to note that Rogers has recently reported 1,023 cases of Type I pneumonia treated with serum within the first 4 days for which the fatality rate was identical—13.9 per cent.

This volume, containing as it does the last word on the serum therapy of pneumonia, should prove invaluable to both practitioners and public health officers. RUSSELL L. CECIL

Introduction to Physiological Chemistry—*By Meyer Bodansky, M.D., Ph.D. (4th ed.). New York: John Wiley,* 1938. 686 pp. Price, $4.00.

With three highly successful editions to his credit, Dr. Bodansky's readers have come to expect from him a superior work, and he has not disappointed them in this latest edition.

Although an introduction to the subject, it is something more. Starting from the crossroads of chemistry, biology, and medicine, it penetrates a considerable way into one of science's enchanted lands. Thorough in its treatment of the subject matter, it is complete in all essentials. There is a judicious blending of the historical with the current. It includes all the new alignments and developments in this ever progressing science. It mentions the latest achievements in the isolation of virus proteins, the fundamental physical-chemical concepts in physiological oxidations, the objective tests of nutritional status, the newer approach to intermediary metabolism through substitutive insertion of deuterium, the heavy isotope of hydrogen into fats for purposes of identification. These are biochemical topics of the day. It is singularly free from errors, although one may be noted: "hemarolopia" is a misspelling for hemeralopia, and even this latter term is misapplied as a synonym of night blindness, nyctalopia being the preferred term.

To bring such a comprehensive body of material within the limits of 686 pages has involved careful and judicious selection. Even that would not be sufficient if it were not subjected to admirable condensation. Its style and arrangement help it to achieve brevity.

Not the least of the book's strong points is its full bibliography, particularly with references to monographs or reviews on many topics. This should continue to be helpful to students confronting the subject for the first time.

This new edition gives every indication that, as a textbook, it will continue to hold the esteem of students. To those with a scientific leaning or training who have never gratified their suppressed urge to know how chemistry has helped to remake biology and medicine, or to those who may have lost and wish to renew their touch with developments in this field, this book has much in it that is keyed to their range. H. D. KRUSE

"Marihuana"—The New Dangerous Drug—*By Frederick T. Merrill. Washington: Opium Research Committee, Foreign Policy Association, 1200 National Press Building,* 1938. 48 pp. Price, $.15 (special rates for quantity orders).

The Foreign Policy Association has prepared a pamphlet on marihuana, which should be useful to health officers since it contains besides essential information, good illustrations of the plant in growth, its leaves, the seeds, and the dried flowering top which gives the largest yield of resin.

By the end of 1938 the majority of states had some prohibitory marihuana legislation. The Marihuana Tax Act of 1937, which is an internal revenue measure, nevertheless only helps to restrict the trade of marihuana to legitimate purposes.

This pamphlet will assist the health officer in the preparation of informative articles for the layman and enable him to coöperate intelligently with state and federal authorities in protecting his community against abuse of the use of this dangerous drug. J. ROSSLYN EARP

Physicians' Vitamin Reference Book—*By the Medical Division, Professional Service Department, E. R. Squibb and Sons. New York: E. R. Squibb & Sons,* 1938. 126 pp.

This book is an advertisement which is worth while and deserves notice. It has been well prepared by the Medical Division of the Professional Service Department of E. R. Squibb and Sons.

It is free from the ordinary blurb.

The description of each vitamin is preceded by a summary of estimated daily requirements, and stated in the International Units where these are available. The vitamin content of a number of foods is given. The Council on Pharmacy and Chemistry of the A.M.A. is frequently referred to. The entire book is well documented, and as far as we have been able to judge, is authoritative. We believe that as far as this part of the book goes it is entirely reliable and will be a useful guide to physicians, for whom it is written.

The book ends with a list of Squibb vitamin products, which is straight advertising. Many of these products violate the principles laid down by the Council on Pharmacy and Chemistry and the Council on Foods of the A.M.A., in that they smack of polypharmacy. Interestingly enough, a "New Series of Articles on Vitamins" has been prepared, the first of which appeared in the *J.A.M.A.*, February 19, 1938, p. 577. This says:

> In a previous survey of progress in this field it was found necessary to warn the public and the medical profession against the commercial exploitation of individual vitamin preparations and particularly against the promotion of mixtures of vitamins as panaceas. The Council on Pharmacy and Chemistry is still convinced that for the present there seems to be no more logical basis for including a variety of vitamins in one preparation than there is for combining a number of other well known dietary essentials in a single pharmaceutical product.

The only exceptions to this are vitimans A and D, which occur together in nature.

No price is given for the book and we understand that it will be sent to any physician who writes to the firm for it. MAZŸCK P. RAVENEL

The Nursery Years—*By Susan Isaacs. New York: Vanguard.* Rep. 1936. 138 pp. Price, $1.50.

The simplicity and frankness with which Susan Isaacs writes makes reading of *The Nursery Years* delightful. It is refreshing in that one does not have to wade through technical terminology, but in a few simply written, readable pages can get at some searching truths about child care and training.

The book was written originally for parents concerning their relationships with their children, but all adults can profit by the wisdom contained in its pages. Many after reading it should have dispelled from their minds some of the generally accepted notions about the care and training of children. For example Dr. Isaacs says that many parents who wish to be modern feel that they should leave the young child to himself most of the day, except for such routine times as eating, toileting, sleeping, and dressing and undressing. She feels, however, that if the baby is alone too much he may become bored and resort to finger-sucking and other similar behavior. Also that precious time may be lost—perhaps forever—which wisely used, could help in the building up of fine relationships between the child and its parents.

Striking statements reveal a philosophy which should instil self-confidence into parents and put them more at ease. "With time for their development, and the sense of our cheerful confidence, children will grow out of the behavior most of us worry about." And again, "It is a help to us in dealing with babes and young children merely to know that even those things they do which seem undesirable to us may be normal ways of growth."

But with all of this seeming casualness the author does not leave the adult feeling that he has no job of child-guidance, or that children will just grow out of their difficulties without help. She does simply and clearly get to the bottom of these difficulties, point out

possible reasons for various kinds of so-called "undesirable behavior" and ways of meeting it, "calmly and therefore more wisely." The book is highly recommended for its sound practicality.

ETHEL L. GORDON

Food Values of Portions Commonly Served—*By Anna DePlanter Bowes and Charles F. Church. Philadelphia (3621 Woodland Ave.): E. P. Dolbey & Co.*, 1937. 12 pp. Price, $.50.

This booklet consists of a table giving the protein, fat, carbohydrate, calcium, phosphorus, and iron content of foods, as expressed in grams per measures or portions frequently served. Values for vitamin A, B, C, D, and G are given in Sherman units, the energy values in calories, and the excess of acid or base values in cubic centimeters of normal solutions. The data, compiled and calculated from authoritative sources, have been conveniently arranged and classified for ready reference.

The table should prove useful to dietitians, nurses, and others in formulating special diets.

D. BREESE JONES

Allergy: Its Practical Application—*By J. A. Rudolph, M.D. Philadelphia: Dorrance*, 1937. 224 pp. Price, $3.00.

This is a concise and well written book, embodying the extensive experience of the author as well as that of other well known workers in this new field.

We are glad to note the statement in the preface that allergy is as much a specialty as any of the other fields of medicine and that it is not limited to the making of a few skin tests which almost any physician can do with a fair amount of success. The author believes that this impression has been created largely by the detail men of commercial drug firms. Certainly the interpretation of such tests and the practical application of measures indicated by them is a specialty and should be reserved for those who have given considerable study to the subject. While the author goes into treatment there is also much concerning prevention, especially by mechanical means, as the screening out of dusts, pollen, etc., and there is a chapter on The Immunology of Allergy well worth reading.

The book ends with an extensive bibliography in which, however, there are a number of mistakes. It is also rather confusing to find on the first page references starting with 142. The book can be recommended for those for whom it is designed. The printing and make-up are good.

MAZÝCK P. RAVENEL

Sanitary Engineering as a Career: A Monograph (from "Careers")—*The Institute for Research Devoted to Vocational Guidance, 537 South Dearborn Street, Chicago, Ill.*, 1938. 20 pp. Price, $1.00.

The profession of sanitary engineering evolved with the discovery that certain microscopic organisms and bacteria are the causes of some of the worst human diseases. In attempting to minimize the harmful effects of such organisms, the sanitary engineer has been primarily engaged in designing and building structures to promote cleaner and more healthful environments. However, "it has not been so many years ago when people generally thought of the field of sanitary engineering as one limited to questions of water supplies, stream pollution, trade wastes, and the collection and disposal of garbage and sewage.

"Engineering methods have proved so successful that now they are being applied in many other lines of sanitation, and at present the sanitary engineer is

called upon to deal also with pasteurization of milk; protection of oyster-growing areas; problems of housing, such as overcrowding, light, heat, and ventilation; malaria control; plague eradication; destruction of vermin; industrial sanitation; smoke abatement; noise reduction; protection of swimming pools and bathing beaches; special hazards of comparatively recent importance, such as poisonings by refrigerants, chemicals used in fumigation, and by hair dyes, shoe dyes, moth-proofing compounds, and like products; and the abatement of nuisances of many kinds."

In performing this work, the engineer may be employed by a government service, manufacturer of sanitary engineering equipment, a consulting engineer, or an industry having problems in disposing of their waste products.

While the responsibilities of the profession are generally large the monetary returns are small. The sanitary engineer derives satisfaction from the wide variety of interest his profession presents, the opportunity for associating with successful men of other professions, and the realization that he is engaged in doing decidedly worth while things.

ARTHUR P. MILLER

The Biology of Arteriosclerosis—*By M. C. Winternitz, M.D., R. M. Thomas, M.D., and P. M. LeCompte, M.D. Springfield, Ill.: Thomas,* 1938. 142 pp. Price, $4.00.

The work recorded in this volume will unquestionably serve as the opening wedge into the wilderness of unknowns that have masked the pathogenesis of arteriosclerosis through the ages. There, of course, are limitations to the application of the principles developed, but one can with little imagination see their application to studies in a number of diseases affecting the vascular system.

The authors are to be commended for their foresight and for carrying through a personally developed idea in such a clear-cut manner. The volume is unusually readable, in good diction, well prepared and organized, and in such language that anyone of general scientific training can understand. The photomicrographs and drawings, many of which are in remarkable color reproductions, illustrate the work to a very unusual degree. The methods of clearing the specimens for purposes of interpretation and illustration add great value.

M. PINSON NEAL

Eat and Keep Fit—*By Jacob Buckstein, M.D. New York: Emerson Books,* 1938. 128 pp. Price, $1.00.

The author presents in popular style the science of nutrition and its relation to health and general well being. The various food elements are discussed in a logical and interesting manner. The chapter on false notions about food combinations and food fads and their fallacies is very well presented and should prove instructive to the layman. Exception may be taken to a number of apparently loose statements, which need further explanation. The book ends with a timely chapter on sane diets to lose or to gain weight. This book should prove of value in educating the person not versed in nutrition as to the importance of diet and its influence on good health.

C. R. FELLERS

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Preventing Pneumonia—Being the very last word in the diagnosis, prevention, and care of pneumonia, this valuable committee report should be studied by all. What some states and cities have already done toward meeting their responsibilities is recorded and what remains to be done is convincingly stated.

ANON. Pneumonia Mortality and Measures for Prevention. Pub. Health Rep. Supp. 142 (July), 1938.

Deaths Down, Births Up—For the registration area, the death rate was lower, the infant mortality rate lowest in history, while the birth rate was higher than either of the past 2 years. The provisional figures for 1937 are: 11.2; 54.4; 17.0 respectively. Gratifying as the infant death rate is, there are indications that it can be improved, for some large cities have rates almost half the national average.

ANON. Provisional Birth, Death, and Infant Mortality Rates for 1937. Pub. Health Rep. 53, 26:1072 (July), 1938.

Further Light on Scandinavian Venereal Disease Prevention—Investigating venereal disease control programs in Scandinavian countries, this British Commission discovered that the compulsory features do not meet serious opposition, and that extreme measures are seldom necessary. Why venereal disease control works well in these countries is explained, but the point is made that the same situations do not exist in England. Though syphilis has been markedly reduced, gonorrhea has not.

ANON. Anti-Venereal Measures in Scandinavia. Brit. M. J. June 11, 1938, p. 1277.

Preventing Neonatal Deaths—Neonatal deaths have not declined as have infant deaths. This Chicago study indicates that improvement in obstetric care, the avoidance of certain drugs, measures to prolong pregnancy, and proper resuscitation would make the statistics better.

BUNDESEN, H. N., *et al.* Factors in Neonatal Deaths. J.A.M.A. 111, 2:134 (July 9), 1938.

Where More than Medicine Is Needed—Who will question these findings? Tuberculosis precipitates economic family problems. Infection cannot be controlled in families with incomes below subsistence level. Some medical services are wasted because social needs are not met. Tuberculosis prevention programs generally have not accepted economic responsibilities. Some relief is now available, but extension of services is needed in most communities.

BURRITT, B. B. Social and Economic Problems in the Control of Tuberculosis. Milbank Quart. 16, 3:287 (July), 1938.

The Grim Reaper's Tuberculosis Harvest—Some gloomy findings about deaths among tuberculosis cases which health educators would do well to keep in the back of the mind when optimistically telling the world that early discovery means early recovery. More than a fifth of the minimal cases were dead after 5 years, and nearly half those moderately advanced had died.

DOWNES, J. A Study of Mortality among Individuals with Active Tuberculosis. Milbank Quart. 16, 3:304 (July), 1938.

Questioning Some Influenza

Theories—Though most recent influenza epidemics have been due to the same virus, some, however, have been shown to be caused by a different one. Immunity to influenza does result from infection, but the degree of immunity varies. Many epidemiologic problems are recognized but cannot be answered in the present state of our knowledge.

FRANCIS, T., JR. The Immunology of Epidemic Influenza. Am. J. Hyg. 28, 1:63 (July), 1938.

British Health Services—American sanitarians and medical leaders who are inclined to work up a lather over preventive and curative medical relationships would do well to read the unimpassioned discussion of the needs in British public health which visualizes greatly extended health services, a closer relationship between hospitals, and health insurance, the latter service to include dependents.

FRAZER, W. M. State Medicine and Industrial Hygiene. J. Roy. San. Inst. 1, 10:587 (July), 1938.

Levaditi Did It First—If you are curious to know who invented the hen egg as a culture medium and to what bacteriologic, biologic, and immunologic uses the poor chick embryo has been put during recent years, you will find this paper a goldmine of information.

GOODPASTURE, E. W. Some Uses of the Chick Embryo for the Study of Infection and Immunity. Am. J. Hyg. 28, 1:111 (July), 1938.

Heat, Humidity, and Health—Excessive death rates from heat exhaustion and conditions in which it is a secondary cause bounce up with the first major heat wave. Excess mortality is slight with succeeding hot spells. The Central states are most frequently affected, but sometimes the North Atlantic states cities suffer the same experience.

GOVER, M. Mortality During Periods of Excessive Temperature. Pub. Health Rep. 53, 27:1122 (July 8), 1938.

Protecting Uncooked Pork Addicts—Pasture raised swine are generally free from trichinae; garbage fed swine have a high incidence of infection. Human trichinosis depends upon food habits of individuals plus the amount of infection in swine. Should we require the cooking of meat in the garbage that is fed to swine?

HALL, M. C. Studies on Trichinosis. Pub. Health Rep. 53, 26:1086 (July 1), 1938.

Children's Permanent Teeth—Out of that rich mine of hygienic information, Hagerstown, come some unhappy findings about elementary school children's teeth. It appears that carious defects appear in permanent teeth 6 times as fast as they are cared for, and that to do a proper job in this one field alone, it would take a tenth of the time of all the dentists available.

KLEIN, H., and PALMER, C. E. The Dental Problem of Elementary School Children. Milbank Quart. 16, 3:267 (July), 1938.

Doubts about T.B. Programs—Because many are infected but only a few contract tuberculosis, a host of questions are raised. So many in fact, that the author doubts whether the antituberculosis measures now employed may certainly be assumed to be sufficient to solve the problem. A usefully disturbing paper.

MILLER, J. A. Some Unsolved Problems of Tuberculosis. J.A.M.A. 111, 2:111 (July 9), 1938.

Effective Leadership at Work—We pay for disease whether we cure it or not. We have far to go before we shall have taken up the lag for preventive medicine between what we know and what we do. These two striking statements of frequently suggested ideas are culled from this general presentation of the U.S.P.H.S. Program.

PARRAN, T. The Work and Aims of the United States Public Health Service. New Eng. J. Med. 219, 3:75 (July 21), 1938.

Critical Appraisal of Tuberculosis Prevention—Ways must be found to help the families of tuberculous patients. Unless financial problems can be solved, the total benefit of existing treatment facilities cannot be secured, and it becomes futile to create more institutions for care of cases, badly needed though they be. Better case finding and case holding programs are also indicated.

PLUNKETT, R. E. Tuberculosis Control. Am. Rev. Tuberc. 37, 6:612 (June), 1938.

Soup for Babies—Canned vegetable soup added to infants' diet at the first visit to the clinic did not produce any digestive upsets, but it did not significantly influence growth.

POOLE, M. W., *et al.* Addition of Vegetable Soup and Strained Vegetables to Diet of Artificially Fed Infants. Am. J. Dis. Child. 55, 6:1158 (June), 1938.

Decentralized Health Administration—New York City health centers, each serving a population greater than most large cities, give promise of solving the otherwise insolvable health administrative problems of the world's greatest accumulation of human beings. Although the building program which will comprise thirty districts is not complete, the 4 year experience of the first units has demonstrated the practicability of the scheme.

RICE, J. L., and BARNARD, M. W. Four Years District Health Administration in New York City. Milbank Quart. 16, 3:253 (July), 1938.

BOOKS RECEIVED

MEDICAL AND LEGAL ASPECTS OF TUBERCULOSIS AS AN OCCUPATIONAL DISEASE AND AS AN ACCIDENTAL INJURY. By Mary Graham Mack. New York: National Tuberculosis Association, 1938. 188 pp. Price, $1.00.

TUBERCULOSIS HOSPITAL AND SANATORIUM DIRECTORY, 1938. New York: National Tuberculosis Association, 1938. 168 pp. Price, $1.00.

A TEXTBOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan. 12th ed. Philadelphia: Saunders, 1938. 808 pp. Price, $6.00.

A TEXTBOOK OF BACTERIOLOGY. By Thurman B. Rice. 2nd ed. Philadelphia: Saunders, 1938. 563 pp. Price, $5.00.

THE AMERICAN RED CROSS. Swimming and Diving. Philadelphia: Blakiston, 1938. 271 pp. Price, $.60.

DISEASES OF THE SKIN FOR PRACTITIONERS AND STUDENTS. 2nd ed. By George Clinton Andrews. Philadelphia: Saunders, 1938. 899 pp. Price, $10.00.

HEALTH AND UNEMPLOYMENT. Some Studies of Their Relationships. By Leonard C. Marsh, A. Grant Fleming and C. F. Blackler. New York: Oxford University Press, 1938. 243 pp. Price, $3.00.

VITAMIN B1 AND ITS USE IN MEDICINE. By Robert R. Williams and Tom D. Spies. New York: Macmillan, 1938. 411 pp. Price, $5.00.

THE VITAMINS AND THEIR CLINICAL APPLICATIONS. A Brief Manual. By Prof. Dr. W. Stepp, Doz. Dr. Kuhnau and Dr. H. Schroeder. Translated by Herman A. H. Bauman. Milwaukee: Vitamin Products Co., 1938. 178 pp.

A TEXTBOOK OF BIOCHEMISTRY. By Roger J. Williams. New York: Van Nostrand, 1938. 525 pp. Price, $6.00.

TUBERCULOSIS CLINIC MANUAL. By Herbert R. Edwards. New York: National Tuberculosis Association, 1938. 57 pp. Price, $.50.

TECHNICS FOR THE BACTERIOLOGICAL EXAMINATION OF DRINKING GLASSES. Fifteen methods currently in use. Health Officers' News Digest, Public Health Committee of the Cup and Container Institute, 30 Rockefeller Plaza, New York, 1938. 10 pp. Mimeographed. Free upon application. (Incorrectly listed in August Journal as "Technics for the Bacteriological Examination of Drinking Water.")

THE TECHNIQUE OF CONTRACEPTION: An Outline. 4th ed. By Eric M. Matsner, M.D. Foreword by Frederick C. Holden, M.D. New York: The National Medical Council on Birth Control, 501 Madison Avenue, 1938. 50 pp. Price, $.50.

"PYREX" LABORATORY GLASSWARE CATALOG (LP-18). Corning Glass Works, Corning, N. Y., 1938. Contains 2,353 items (700 listed first time). 128 pp.

ASSOCIATION NEWS

THE KANSAS CITY MEETING

THIS is the last but one issue of the *Journal* to bring to the membership news and notes of the Kansas City Annual Meeting.

Railroad rates, hotel information, Local Committee plans for entertainment and inspection trips, the preliminary program of the scientific sessions have all been published. Last month's *Journal* conveyed a considerable portion of this information and should be consulted. It will answer the most frequently asked questions. A news letter to the membership is in preparation and will be mailed immediately after Labor Day. An attempt will be made therein to catch all loose ends together and refer readers by page and number to details previously published and to summarize what is in store for us at Kansas City. The Chairman of the Local Committee for the 67th Annual Meeting, Dr. Edwin Henry Schorer, will tender by mail on or about October 1 his assurances to all that a hearty welcome awaits them in his city.

While the dates for the meeting have been widely publicized as October 25–28, Tuesday to Friday, inclusive, it must be pointed out that much of interest awaits the early arrival in Kansas City, whether or not he or she is a member of the several organizations which will meet on Monday, October 24. The Conference of State Sanitary Engineers and the Conference of State Laboratory Directors will hold meetings limited to their constituents. The American School Health Association, on the other hand, will exclude no one from the interesting session planned for Monday afternoon. The International Society of Medical Officers will sponsor an Institute on the Practical Administration Affairs of the Health Officer on Monday. All health officers and public health workers interested in administrative problems are cordially invited to attend. There will be meetings both morning and afternoon. The program in full will be published in the October *Journal*. The latch string is out for all to attend the dinner meeting Monday evening sponsored by the Association of Women in Public Health. And the local public health workers organized in the Missouri Public Health Association ask us to extend an invitation to everyone to drink a cup of tea with them between 5 and 7 on Monday and meet many of the members of the Local Committee.

A considerable number of delegates from the East, whether they arrive on Monday, Tuesday, or earlier, are anticipating their first ride on the Santa Fe's streamlined trains between Chicago and Kansas City. This rapid service is only 5 months old and deserves a trial. The Santa Fe's advertisement on page XVI tells all about it.

Those who will drive to Kansas City are probably well provided with road maps and directions. If any doubts arise as to best roads and routes, the Convention and Visitors Bureau in Kansas City or Dr. Schorer's office will be glad to lend a helping hand.

Although the Program Committee, the Local Committee, and the Association office have tried to anticipate all inquiries and provide information before it is asked for, it is safe to say that items of interest will present themselves as the meeting approaches, and readers are urged to consult this section of the October *Journal* for last minute announcements.

In making application for hotel accommodations, it is necessary that four choices of hotels be indicated and that a reasonable range of rates desired be shown. Whenever possible, arrangements should be made for occupancy of double rooms: only a limited number of single rooms are available.

HOUSING COMMITTEE
1028 Baltimore Avenue
Kansas City, Missouri

Date.....

Please make hotel reservations noted below:

Hotel ..... First Choice Hotel ..... Third Choice

Hotel ..... Second Choice Hotel ..... Fourth Choice

...Double Rooms with bath for ..... persons. .....Rate desired $... to $... per day

...Single Rooms with bath.....Rate desired $... to $... per day

...Suites—Parlor, ...Bedroom(s) with bath for ... persons. Rate desired $... to $... per day

Special Instructions .....

.....

.....

Arriving ....., hour .....A.M. .....P.M. Leaving .....

If the hotel of first choice is unable to accept the reservation, the HOUSING COMMITTEE will endeavor to comply with your second, third or fourth choice in the order named. You will receive direct confirmation from the hotel accepting the reservation when made.

Rooms will be occupied by:

NAME	STREET ADDRESS	CITY	STATE
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

(Please attach sheet listing additional names if necessary)

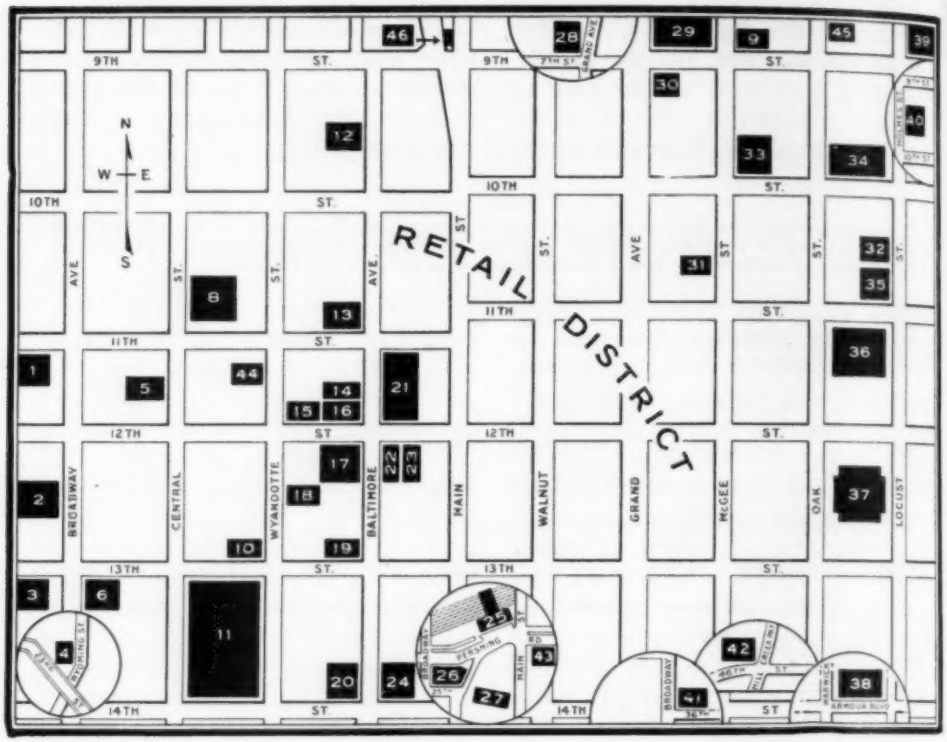
Name .....

Firm Name .....

Mailing Address .....

City ..... State .....

(See map on page 1142)



HOTELS—(All Rates Quoted are for Rooms with Bath)

Map No.	Hotel	Address	Rates Single	Rates Double
18	Aladdin	1213 Wyandotte	$2.00–$2.50	$3.00– $5.00
21	Baltimore	12th and Baltimore	$2.00–$3.50	$3.00– $6.00
38	Bellerive	214 East Armour	$2.50–$4.00	$4.00– $5.00
14	Bray	1114 Baltimore	$1.50–$2.50	$2.50– $3.50
40	Cnase	911 Holmes	$1.50	$2.50
2	Commonwealth	12th and Broadway	$2.00–$3.00	$3.00– $5.00
22	Dixon	12th and Baltimore	$2.00–$3.50	$3.50– $5.00
32	Drake	1016 Locust	$1.50	$2.50
41	Hyde Park	36th and Broadway	$3.00–$7.00	$3.50–$10.00
13	Kansas Citian	11th and Baltimore	$2.50–$4.00	$3.50– $7.00
17	Muehlebach	12th and Baltimore	$3.00–$6.00	$4.50– $8.00
42	Park Lane (Apartments)	4600 Mill Creek Parkway	$3.00–$5.00	$4.00– $7.00
16	Phillips	12th and Baltimore	$2.50–$4.00	$4.00– $6.00
33	Pickwick	10th and McGee	$2.50–$4.00	$3.50– $5.00
43	Plaza	13 East 24th	$1.50–$2.50	$2.50– $3.50
24	President	14th and Baltimore	$2.50–$5.50	$3.50– $8.00
44	Rasbach	1116 Wyandotte	$1.50–$2.50	$2.50– $3.50
10	Robert E. Lee	13th and Wyandotte	$1.75–$2.50	$2.75– $3.50
23	Sexton	15 West 12th	$2.00–$2.50	$3.00– $5.00
45	Snyderhof	917 Oak	$1.50–$2.50	$2.00– $4.00
15	Stats	12th and Wyandotte	$2.00–$3.50	$3.00– $6.00
9	Victoria	9th and McGee	$1.50	$2.00
46	Westgate	Main and Delaware at 9th	$1.50–$2.00	$2.00– $3.00

HALLS

Map No.	Hall	Address
11	Municipal Auditorium	13th to 14th, Wyandotte to Central
4	American Royal Building	23rd and Wyoming
8	Ararat Temple	11th and Central
20	Edison Hall	1330 Baltimore

PUBLIC BUILDINGS

Map No.	Building	Address
36	City Hall	414 East 12th
13	Convention Bureau, Chamber of Commerce	1028 Baltimore
37	Court House	415 East 12th
29	Federal Building	815 Grand
20	K. C. Power and Light Building	1330 Baltimore
27	Liberty Memorial	Union Station Plaza
26	Post Office	315 West Pershing Road
39	Public Library	506 East 9th
25	Union Station	30 Union Station Plaza

CLUBS

Map No.	Club	Address
5	Eagles Club	1108 Central
28	Elks Club	120 East 7th
13	Kansas City Athletic Club	11th and Baltimore
19	Kansas City Club	13th and Baltimore
12	University Club	918 Baltimore
34	Y.M.C.A.	10th and Oak
31	Y.W.C.A.	1020 McGee

CHURCHES

Map No.	Church	Address
1	Cathedral	411 West 11th
35	First Christian Church	11th and Locust
3	Grace and Holy Trinity (Episcopal)	415 West 13th
30	Grand Avenue Temple (Methodist)	9th and Grand
6	West Side Branch Baptist	1301 Broadway

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

William H. Ball, M.D., Apalachicola, Fla., Director, Franklin and Gulf County Health Unit

Thomas H. Biggs, M.D., Thurston County Court House, Olympia, Wash., Health Officer, Thurston-Mason-Olympia District

Edward R. Harris, M.D., Township Hall, Kirkland Lake, Ont., Canada, Medical Officer of Health, Township of Teck

Samuel Hyman, M.D., C.P.H., 18 Pearl St., Utica, N. Y., Assistant District State Health Officer

Edwin H. Jorris, M.D., 200 Pearl St., Sparta, Wis., District State Health Officer

R. W. Kite, M.D., Court House, Bellingham, Wash., Whatcom County Health Officer

Richard A. Koch, M.D., Whitman County Health Dept., Colfax, Wash., Health Officer

Fred K. Laurentz, M.D., Bell County Health Unit, Temple, Tex., Assistant Director

Norman E. Magnussen, M.D., Pierce County Health Dept., Tacoma, Wash., Health Commissioner

Joseph A. Markley, M.D., Main St., Weston, W. Va., Lewis District Health Officer

Frank M. McHugh, M.D., 17 Exchange Place, Salt Lake City, Utah, Member, Board of Health

A. Erin Merkel, M.D., Court House, Medford, Ore., Jackson County Health Officer

Frank R. Mount, M.D., Medical Arts Bldg., Portland, Ore., Member, State Board of Health

Edward E. H. Munro, M.D., Grand Junction, Colo., City Physician.

Henry Raile, M.D., 19 S. Wolcott St., Salt Lake City, Utah, Assistant City Health Commissioner

Guy V. Rice, M.D., Jesup, Ga., Wayne County Commissioner of Health

David R. Rich, M.D., Union County Health Unit, LaGrande, Ore., Union County Health Officer

Peter H. Rozendal, M.D., Klamath County Health Dept., Klamath Falls, Ore., Health Officer

Robert H. Trimble, M.D., Court House, London, O., Health Commissioner

T. Oscar Vinson, M.D., Griffin, Ga., Health Officer, Griffin and Spalding County

Laboratory Section

Avery Caine, 228 Douglas St., Salt Lake City, Utah, Laboratory Technician, Idaho Falls Latter Day Saints' Hospital (on leave)

Robert T. Foster, 207 W. Market St., Warrensburg, Mo., State Bacteriologist

Thomas L. Hartman, 804 Neches St., Austin, Tex., Bacteriologist, State Dept. of Health

Vladimir G. Isvekov, M.D., 1403 Elgin Ave., Houston, Tex., Director, Medicolegal Laboratory

Bernadine S. Langlie, 2300 Franklin Ave., Seattle, Wash., Bacteriologist-Serologist, State Dept. of Health

Morris Silverman, 2653 S. Cloverdale Ave., Los Angeles, Calif., Bacteriologist, Bureau of Venereal Diseases, State Dept. of Public Health

John E. Van Amburgh, 613 S. Main St., Colfax, Wash., Milk Sanitarian, Whitman County Health Dept.

Vital Statistics Section

Marion A. Hellert, R.N., 148 E. Gorham St., Madison, Wis., Bureau of Vital Statistics, State Board of Health

Elmer S. Rosenthal, Rm. 10, Municipal Courts Bldg., St. Louis, Mo., Registrar of Vital Statistics

Donald W. Skeel, M.D., 756 S. Spring St., Los Angeles, Calif., Medical Director, Occidental Life Insurance Co.

Alfred A. Willander, M.D., 135 S. LaSalle St., Chicago, Ill., Medical Director, Mutual Trust Life Insurance Co.

Public Health Engineering Section

Huger M. Bryant, St. George, S. C., Sanitarian, Dorchester County, State Board of Health

John M. Dewey, District 5, State Board of Health, Salem, Mo., District Public Health Engineer

W. P. Henderson, 7742 Jones Ave. N.W., Seattle, Wash., Shellfish Sanitarian, State Dept. of Health

Robert G. Meldrum, 814 Enosleigh Court, Upper Woburn Pl., London, W.C.1, England, Architect and Consultant

Lloyd A. Morley, 1401 Smith Tower, Seattle, Wash., Camp Sanitarian, State Dept. of Health

John R. Mudge, 223 Center St., Los Angeles, Calif., President, Chemical Equipment Co.

Kaarlo W. Nasi, Old National Bank Bldg., Colfax, Wash., Sanitary Engineer, Whitman County Dept. of Health

Clyde T. Norman, City Hall, Dallas, Tex., Sanitary Engineer, Water Department

Herbert M. Packer, Rm. 621, City Hall Annex, Philadelphia, Pa., Chief, Division of Housing and Sanitation, Dept. of Health

Robert F. Portman, Municipal Bldg., Lajunta, Colo., Sanitarian, Otero County Health Unit

Walter R. Shell, Livingston, Tenn., Sanitation Officer, Upper Cumberland District Health Dept.

Meredith H. Thompson, Dr.Eng., C.E., Fort Valley, Ga., Assistant Division Engineer, State Board of Health

Roy M. Wiley, 1412 Smith Tower, Seattle, Wash., Milk Sanitarian, State Dept. of Health

Industrial Hygiene Section

Fred S. Parney, M.D., Dept. of Pensions and National Health, Ottawa, Ont., Canada, Chief, Division of Industrial Hygiene

Samuel T. Stafford, 4059a W. Belle Pl., St. Louis, Mo., Graduate Student

Food and Nutrition Section

Elvin G. Cole, D.V.M., 216 L St., Salt Lake City, Utah, Assistant Chief Sanitarian, Board of Health

Margurite J. Fletcher, 116 N. W. Temple, Salt Lake City, Utah, Restaurant Inspector, Board of Health

Ariel C. Merrill, Public Safety Bldg., Salt Lake City, Utah, Chief Sanitarian, Board of Health

Charles A. Remy, 967 Yale Ave., Salt Lake City, Utah, Milk Sanitarian, Board of Health

Stephen J. Wolff, 1001 S. Grand Blvd., St. Louis, Mo., Research Div., Pevely Dairy Co.

Child Hygiene Section

Mildred E. Doster, M.D., 2150 S. University Blvd., Denver, Colo., School Physician

Edward M. Jeppson, M.D., 130 Capitol Bldg., Salt Lake City, Utah, Director, Maternal and Child Health Division, State Board of Health

F. Craig Johnson, M.D., 1850 Gilpin St., Denver, Colo., Examining Physician, Public Schools

Public Health Education Section

James R. Adams, Box 2612, Birmingham, Ala., Assistant Secretary, Liberty National Life Insurance Co.

David S. Bennett, M.D., 225 Cuyler, Palmyra, N. Y.

Arthur W. Chance, M.D., D.D.S., Medical-Dental Bldg., Portland, Ore., Member, State Board of Health

Lyman L. Daines, Ph.D., M.D., 1366 Butler Ave., Salt Lake City, Utah, Dean of Medical School

Marie P. Fackt, M.D., 580 William St., Denver, Colo., Examining Physician, Public Schools

Lois P. Hayes, 130 State Capitol, Salt Lake City, Utah, Medical Social Work Consultant, Crippled Children's Division, State Board of Health

Ann W. Haynes, Box 327, Kentfield, Calif., Public Information Editor, State Dept. of Public Health

Charles Hilton, 1412 Smith Tower, Seattle, Wash., Director, Division of Health Education, State Dept. of Health

Benjamin Kletzky, D.D.S., 1850 Gilpin St., Denver, Colo., Operator, Dental Clinic, Public Schools

H. L. Marshall, M.D., University of Utah, Salt Lake City, Utah, Teacher and University Physician

Ruth B. McCammon, 1002 Remington St., Fort Collins, Colo., State Home Agent, Extension Service, Colorado State College

Lucile O'Reilly, 1363 Milwaukee St., Denver, Colo., Medical Social Worker, Fitzsimmons General Hospital

Maurice H. Rees, Ph.D., M.D., 4200 E. 9th Ave., Denver, Colo., Dean and Superintendent, University of Colorado, School of Medicine

Mary E. Sutherland, Colorado State College, Extension Service, Fort Collins, Colo., Child Development and Parent Education Specialist in Home Health and Sanitation

Holland E. Wight, D.D.S., Yakima Medical Clinic, Yakima, Wash.

Public Health Nursing Section

Virginia M. Adkins, 3134 S. Grant St., Englewood, Colo., County Public Health Nurse

Katherine K. Baker, State Dept. of Public Health, Santa Fe, N. M., Regional Consultant, Public Health Nursing

Dorothy H. Bayles, Blanding, Utah, Public Health Nurse, State Board of Health

Mary C. Coolidge, 4737 Brooklyn Ave., Seattle, Wash., Assistant State Advisory Public Health Nurse, State Dept. of Health

Mary L. Crosby, P. O. Box 606, Waycross, Ga., Consultant Nurse, State Dept. of Public Health

Clara H. Cunningham, Ignacio, Colo., Field Nurse, U. S. Indian Service

Evelyn C. Horton, C.P.H., 1309 Grant St., Denver, Colo., Public Health Nursing Supervisor, Metropolitan Life Insurance Co.

Vera D. Knickerbocker, 1201 E. 16 St., Denver, Colo., Field Secretary, Colorado Tuberculosis Assn.

Urania Ostberg, R.N., Colfax, Wash., County Public Health Nurse

Mary H. Pittman, 3220 Binz, Houston. Tex., Supervising Nurse, Harris County Health Dept.

Elizabeth M. Somerville, Ridge Ave., New Cumberland, W. Va., County Health Nurse

Alice M. West, R.N., 1417 Palmer St., Miles City, Mont., Maternal and Child Health Advisory Nurse, State Board of Health

Epidemiology Section

John A. Cowan, M.D., 1021 Fifth, Bismarck, N. D., Director, Division of Preventable Diseases, State Dept. of Health

Clifton Hall, M.D., M.P.H., State Board of Health, Topeka, Kans., Director, Tuberculosis Control

James J. Quinlivan, M.D., C.P.H., Paul Smith Bldg., Saranac Lake, N. Y., Epidemiologist-in-Training, State Dept. of Health

Unaffiliated

Charles H. Boissevain, M.D., Colorado College, Colorado Springs, Colo.

Francis A. Carmelia, M.D., 112 Federal Office Bldg., San Francisco, Calif., Commissioned Medical Officer, U. S. Public Health Service

Marian V. Fegley, R.N., 415 W. 23 St., New York, N. Y., Supervising Nurse, Dept. of Health

Francis S. Finch, Faidley Bldg., Omaha, Nebr., Assistant Secretary, United Benefit Life Insurance Co.

Tomas M. Gan, M.D., C.P.H., Harvard University School of Public Health, Boston, Mass., Student (Health Officer in charge, Urban Health Demonstration Unit, University of the Philippines)

Edward W. Rowe, M.D., 1339 O St., Lincoln, Nebr., Medical Director, Midwest Life Insurance Co.

John J. Torres, D.D.S., 1301 Florida Ave., Tampa, Fla., Dentist, Hillsborough County Health Unit

EMPLOYMENT SERVICE

The Employment Service will register persons qualified in the public health field without charge. Public health nurses are registered with the Nurse Placement Service, 8 South Michigan Avenue, Chicago, Ill., with which the Association coöperates.

Replies to these advertisements, indicating clearly the key number on the envelope, should be addressed to the American Public Health Association, 50 W. 50 Street, New York, N. Y.

POSITIONS AVAILABLE

City-County Health Officer, population 20,000; graduate physician with public health experience or training necessary; eligible to registration in Montana. **W378**

Wanted—(a) Director of industrial hygiene; state appointment; no politics; $275–$300.

(b) Graduate nurse with college degree to serve as dormitory counselor in exclusive college for women; should be 25–35 years of age and interested in dealing with problems of adolescent girls; unusual opportunity.

(c) County health officers; southerners preferred; positions entirely free of politics.

(d) School physicians; work administrative in character; duties include supervising sanitation facilities and participating in community health program; experience in pediatrics desirable.

Write: #75-PH, Medical Bureau, M. Burneice Larson, Director, Pittsfield Building, Chicago, Ill.

POSITIONS WANTED

ADMINISTRATIVE

Physician, M.D., Class A medical school; M.P.H., Harvard School of Public Health; extensive experience in pediatrics and school medical service; also background of county health administration and teaching in medical school, will consider expanded opportunity in teaching or research. **A302**

Experienced physician, administrator, epidemiologist, and teacher, now employed, with C.P.H. from Johns Hopkins and 14 years public health background, will consider position. Prefers epidemiology in city or state department. Excellent references. **A355**

Physician, M.D., University of Cincinnati; with postgraduate training in venereal disease control, Johns Hopkins; now employed, is available for venereal disease control officer. **A363**

Experienced administrative health officer with excellent background is available for a responsible position with adequate salary. **A375**

Physician, M.D., Class A medical school; M.S.P.H., University of Michigan, 1937; now serving as district state health officer, seeks full time administrative position in city or county. **A367**

MATERNAL AND CHILD HEALTH

Woman physician, graduate of University of Iowa, who has directed State bureau of maternal and child health, now employed, will consider another position. **C318**

Woman physician with excellent medical training and background of public health nursing experience, seeks position in maternity and infancy work. **C376**

HEALTH EDUCATION

Young man, M.S.P.H., University of Michigan; at present college teacher of hygiene and physical education and experienced in university medical service, desires position as executive in public or private health organization. **H357**

Well qualified woman in health education wishes position as health coördinator or health counselor. Has wide experience, and Ph.D. from New York University. **H236**

Young woman, M.S., University of Minnesota, wishes position as health education director. An excellent background of experience covers directorship of a state laboratory of hygiene, health education director of a state tuberculosis association, instructor in bacteriology and health education, and executive secretary of a dairy council. **H326**

Young woman, M.A., Health Education, Teachers College, Columbia University; with splendid international experience, seeks position as director of health education with preference for New York City. **H369**

Woman, M.D., Boston University; special work Columbia and Massachusetts Institute of Technology; one year's experience in State hospital; interested in psychiatry, desires position in the East in hospital for mental diseases, or industrial school. **H248**

LABORATORY

Laboratory worker, aged 27, trained at Massachusetts Institute of Technology and Boston University, and with M.S. in Biochemistry, University of Michigan; 2 years' graduate work in public health; experienced in chemical, bacteriological, and biochemical research, and with teaching experience in college hygiene, desires position in food industry involving research or control. **M374**

Experienced laboratory director with background of dairy products manufacture and research in control methods; University of Wisconsin, M.S. and Ph.D.; desires administrative position with food manufacturing or processing industry, or association with health department doing routine and research work in food control. **L381**

Bacteriologist and pathologist with wide administrative experience, Ph.D., Brown University, will consider leading position in his field. **L371**

Laboratory technician, B.Sc., University of Nebraska, with experience in Army, State public health laboratory, and U.S.P.H.S. field laboratory, seeks position, preferably in medical school or university. **L379**

SANITARY ENGINEERING

Experienced sanitary engineer, graduate of Massachusetts Institute of Technology, seeks responsible position. **E372**

Public health engineer, B.S. in Sanitary Engineering from Massachusetts Institute of Technology; experienced in Massachusetts, Connecticut, and Kentucky; seeks position as sanitary or public health engineer with health department. **E380**

MISCELLANEOUS

Physician, graduate of Johns Hopkins Medical School and well qualified in medicine and tuberculosis, will consider a clinical position in the medical field. **M377**

Dentist, graduate of Temple University, with excellent postgraduate experience, desires position in administrative aspects of dental hygiene. **M352**

Experienced teacher in bacteriology and public health; Ph.D., Cornell; now professor in Grade A medical school, will consider teaching, executive or administrative position. **M327**

NEWS FROM THE FIELD

MENTAL HYGIENE SYMPOSIUM

THE National Committee for Mental Hygiene has announced a symposium on mental health, to be presented before the Section on Medical Sciences of the American Association for the Advancement of Science at the Richmond, Va., session, December 28–30, 1938. Collaborating in the enterprise are the American Psychiatric Association, an affiliated body of the A.A.A.S.; the U. S. Public Health Service; the Mental Hospital Survey Committee, composed of 8 national medical bodies; the National Committee for Mental Hygiene; and a special committee of psychiatrists who are developing the program for the symposium under the chairmanship of Dr. Walter L. Treadway, Assistant Surgeon General of the Public Health Service in charge of mental hygiene activities.

The symposium will provide an unusual opportunity to bring the problems of mental health before the forum of the A.A.A.S. and, through it, to the scientific and lay public of America. Its object will be, essentially, to bring about a synthesis of our present knowledge of the problem, to evaluate past experience, to crystallize aims and objectives, and to marshal the scientific forces of the nation for a concerted and coördinated attack on mental disorders and disease. It will be the first time in the history of American psychiatry and the mental hygiene movement that the subject has received the special attention of this scientific body as a major topic on its agenda.

NEW HAVEN HOUSING AUTHORITY

THE appointment has been announced of the New Haven [Conn.] Housing Authority, of which Professor C.-E. A. Winslow, of Yale University, New Haven, is Chairman, and Elizabeth Fox, Executive Director of the New Haven Visiting Nurse Association, and Associate Professor of Nursing Education at Yale University, is a member. Other members include: James W. Hook, an industrialist, who is also Chairman of the New England Council; George W. Crawford, lawyer; and James F. Welch, Business Agent of the Bricklayers' Union.

In addition to the chairmanship of this Authority, Professor Winslow is Chairman of the Committee on the Hygiene of Housing, American Public Health Association, and a representative of the United States in the Housing Section of the Health Committee, League of Nations. He is identified also with the National Association of Housing Officials Committee on Physical Standards and Construction, and is Chairman of the American Society of Heating and Ventilating Engineers Committee on Research.

PASADENA MALNUTRITION STUDY

A JOINT project of the Pasadena, Calif., City Health Department and the Council of Social Agencies in Pasadena is a survey launched recently to determine if citizens are securing a diet adequate to prevent malnutrition.

A preliminary study of 80 families will be made immediately in coöperation with the California Institute of Technology.

BROOKLYN MATERNITY CARE

A PLAN under the auspices of the Kings County Medical Society, Brooklyn, N. Y., provides that every expectant mother in Brooklyn will receive full medical attention regardless of her ability to pay. Mem-

bers of obstetric staffs in the 49 public and private hospitals of Brooklyn will grant consultation. Except in instances where the attending physician provides evidence that the patient can afford to pay for all or part of his services, compensation will not be required.

This new program was adopted following a survey by the Committee on Maternal Welfare of the Kings County Medical Society.

NEW HAMPSHIRE OCCUPATIONAL DISEASES STUDY

A PRELIMINARY study of industries in New Hampshire, with reference to occupational disease, is being made by the New Hampshire State Board of Health. The purpose of the study is to obtain information concerning the environment associated with the various occupations which potentially may have an effect on the health of employees.

This industrial survey is a result of recommendations made in the report of the Commission for the Study of Occupational Diseases in New Hampshire to the Governor in 1937.

BIRTH REGISTRATION PAMPHLET

A FOUR-PAGE pamphlet entitled "What Happens When Birth Registration Goes Amiss?" was recently distributed to all physicians, midwives, and public health nurses by the Maryland State Department of Health.

Birth registration goes amiss because of failure to file birth certificate, giving wrong date, wrong sex, wrong name, or because of illegible writing.

SHELLFISH AREA CONDEMNED

THE sale for human food of shellfish taken from the "Great Bay Area" of New Hampshire has been banned by the State Board of Health. Analyses of clams and water from the lower part of the area have definitely shown that shellfish taken there are unfit for food because of the contamination of rivers flowing into the area with sewage from Portsmouth, Dover, and other towns.

Studies are also in progress of clams from the mouth of the Exeter River and oysters from the Oyster River.

PASTEURIZED MILK IN ALASKA

GRADE "A" pasteurized milk is now available in the local markets of Alaska. The dairies have been graded in accordance with the U. S. Public Health Service Standard Milk Ordinance.

The only pasteurizing plant operating in the territory of Alaska has been awarded Grade "A" and an average of 400 gallons of pastuerized milk is daily being produced by this plant.

INDIANA'S INDUSTRIAL SURVEY

THE new department of the State of Indiana, the Bureau of Industrial Hygiene, is conducting a study of industrial hazards.

This survey is expected to provide a cross-section of health conditions in the factories of Indiana by checking those industries known to have hazardous health conditions.

COMMUNICABLE DISEASE CONTROL IN MICHIGAN

THE appointment of an advisory committee to assist in determining plans and policies for more effective control of communicable diseases has been announced by Don W. Gudakunst, M.D., Health Commissioner of Michigan, with the approval of the State Council of Health.

The new committee, serving in an advisory capacity to Filip C. Forsbeck, M.D., Director of the Bureau of Communicable Diseases, will include: C. D. Barrett, M.D., E. E. Martmer, M.D., Allan J. McLaughlin, M.D., C. A. Neafie, M.D., Franklin H. Top, M.D., and V. K. Volk, M.D.

ONTARIO PASTEURIZATION LAW

ONTARIO is the first Canadian province to adopt a compulsory pasteurization law.

Beginning October 1, the milk supply of all Ontario cities, towns and adjoining suburban areas will be pasteurized, and by December 31, the order will apply to the whole province.

PENNSYLVANIA CANCER CLINICS

SEVEN cancer clinics will be established by the Pennsylvania State Health Department. This plan was discussed at a recent conference of the department and a program of study and experimentation was launched as the basis for drafting legislation.

NEW YORK STATE HEALTH OFFICERS ASSOCIATION

AT the annual conference of Health Officers and Public Health Nurses, held June 28–30 under the auspices of the New York State Department of Health, in Saratoga Springs, N. Y., new officers were elected as follows by the New York State Health Officers Association:

President—Charles G. Lenhart, M.D., Spencerport
First Vice-President—Myron M. Metz, M.D., Williamsville
Second Vice-President—John H. Flynn, M.D., Troy
Third Vice-President—William H. Runcie, M.D., Freeport
Secretary—Marian Wilcox, M.D., Tonawanda
Treasurer—George S. Price, M.D., Fairport

MICHIGAN DOCTORS BECOME MAYORS

THE following physicians in Michigan have been elected Mayors of the places indicated:

Dr. Thomas E. DeGurse—Marine City
Dr. Frank V. Carney—St. Clair
Dr. Arnold R. Miller—Harrisville
Dr. Alden G. Sheets—Eaton Rapids
Dr. Buell H. Van Leuven—Petoskey

PERSONALS

Central States

DR. GEORGE H. BISCHOFF, of Akron, Ohio, has been appointed to take charge of the Maternal and Child Health Program of the Idaho State Department of Health, with headquarters at Boise.

FRANCIS HARRINGTON, M.D.,† Health Commissioner of Minneapolis, Minn., and founder and Director of the Lymanhurst Health Center, was honored at a dinner given recently at the Minnesota Union, University of Minnesota. This occasion also commmemorated the 17th anniversary of the health center as a school for tuberculous children.

WILL H. MOORE, M.D.,† of Valley City, N. D., was elected President of the North Dakota Health Officers' Association, at the annual meeting recently held in Bismarck. MAYSIL M. WILLIAMS, M.D.,† of Bismarck, was elected Secretary.

DR. ALFRED G. RICE, of Northville, Mich., has been appointed Director of Tuberculosis Control in North Alabama, succeeding DR. KELLIE N. JOSEPH, of Birmingham, who retired to reënter private practice.

DR. CONRAD S. SOMMER, Medical Director, Illinois Society for Mental Hygiene, has been appointed Director of the Society, succeeding HELEN L. MYRICK, resigned.

WILMIER M. TALBERT, M.D.,† of Decatur, Ill., formerly City Physician for Decatur, has been appointed Health Officer of a new district health unit with headquarters at Clinton. The new unit includes Macon, Moultrie, Dewitt, Piatt, and McLean Counties.

MAYO TOLMAN has been appointed Director of the Division of Vital

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* Fellow A.P.H.A.
† Member A.P.H.A.

Statistics in the Iowa State Department of Health, Des Moines.

Eastern States

DR. ALICE HAMILTON,* of Boston, Mass., received the honorary degree of Doctor of Science from the University of Rochester, N. Y., at its 88th annual commencement, June 20.

NINA B. LAMKIN,† formerly Health Education Consultant with the Bellevue-Yorkville Health Demonstration, New York, N. Y., has recently been appointed School Health Consultant in the Division of Maternal and Child Health, State Department of Public Health, Santa Fe, N. M.

D. Y. MOORE, M.D.,* Chairman of the Board of Health and Health Officer of Manchester, Conn., for nearly 25 years, has been appointed Medical Examiner, to succeed the late DR. LE VERNE HOLMES.

THOMAS M. RIVERS, M.D.,† Director of the Hospital of the Rockefeller Institute for Medical Research, New York, N. Y., received the honorary degree of Doctor of Science from the University of Rochester, N. Y., at its 88th annual commencement, June 20.

RICHARD EDWIN SHOPE, M.D., of the Department of Animal and Plant Pathology, Rockefeller Institute for Medical Research, Princeton, N. J., has been awarded the Alvarenga Prize for 1938 by the College of Physicians of Philadelphia. Dr. Shope received this award in recognition of his research in influenza. The Alvarenga Prize was established by the will of Pedro Francisco deCosta Alvarenga to be awarded July 14 of each year to the author of the best memorial or unpublished essay on any branch of medicine deemed worthy of the prize.

ALLAN A. TWITCHELL,† Technical Secretary of the Committee on the Hygiene of Housing, of the American Public Health Association, appeared before the Housing Round Table of the National Planning Conference in Minneapolis, Minn., recently, where he discussed the hygienic aspects of housing.

Southern States

DR. JOHN S. ANDERSON, of New Bern, N. C., Health Officer of Craven County, has resigned to become Health Officer of Cabarrus County, succeeding DR. DANIEL G. CALDWELL, of Concord, resigned because of ill health.

EDWARD S. ARMSTRONG, M.D., of Augusta, Ga., has been appointed Health Commissioner of Crisp County.

DR. HENRY H. ASHER, of Ozark, Mo., has been appointed head of District No. 6—a recently formed health unit, consisting of Barton, Jasper, Newton, McDonald, Dade, Lawrence, Barry, Stone, Christian, Taney, Ozark, Douglas, Webster, and Wright Counties.

WILL H. AUFRANC, M.D.,† of Kennett, Mo., is in charge of District No. 3, a recently formed health unit including Pemiscot and Dunklin Counties.

HELEN BEAN, Public Health Nursing Consultant, U. S. Public Health Service, Washington, D. C., has been appointed director of a new bureau of public health nursing in the Michigan State Department of Health, Lansing, effective early in September.

RAY H. BIGGS, M.D.,† of New Albany, Miss., has been appointed Health Officer of Madison County, succeeding CECIL C. SMITH, M.D., C.P.H.†

ENOCH M. BRYAN, M.D.,† of Fredericktown, Mo., has been appointed

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* Fellow A.P.H.A.
† Member A.P.H.A.

to take charge of District No. 4, a recently formed health unit consisting of Butler, Wayne, Bollinger, Cape Girardeau, Perry, St. Genevieve, Madison, Iron, and Washington Counties.

WILLIAM B. BUCKNER, M.D., of Moss Point, Miss., has been elected Health Commissioner of Dougherty County, Ga., with headquarters in Albany.

JAMES A. CRABTREE, M.D.,* of Chattanooga, Tenn., has been appointed to take charge of the survey of cancer of the lungs which the U. S. Public Health Service is conducting in Washington, D. C., Hospitals, as part of a national study.

RUTH E. FAIRBANK, M.D.,† Associate in Psychiatry, Johns Hopkins University School of Medicine, Baltimore, Md., has been appointed Professor of Hygiene at Mount Holyoke College, South Hadley, Mass.

CHARLES W. MEINERSHAGEN, M.D.,† of Salem, Mo., has been appointed to take charge of District No. 5, a recently formed health unit consisting of Howell, Oregon, Ripley, Carter, Reynolds, Shannon, Texas, Dent, Pulaski, Phelps, and Crawford Counties.

ROY W. MCGEE, M.D., of Ben Hill, Ga., will study for one year at the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md., before taking over the position of Director of Health of Fulton County.

J. W. ROY NORTON, M.D.,† Assistant Director of County Health Work on the staff of the North Carolina State Health Department, Raleigh, N. C., has been appointed Assistant Director of the Division of Preventive Medicine.

LONSDALE J. ROPER, M.D.,* recently Associate Director of the venereal disease program of the Virginia State Health Department, Richmond, has been made Director of Rural Health for the Department, succeeding CHARLES HOWE ELLER, M.D., DR.P.H.*

SHIRLEY C. TITUS, R.N.,† Director of the Vanderbilt University School of Nursing, Nashville, Tenn., has resigned from that position.

DR. THEODORE L. WADDLE, of Dexter, Mo., has been appointed to take charge of District No. 2, a recently formed health unit consisting of Stoddard, Scott, New Madrid, and Mississippi Counties.

ROBERT D. WRIGHT, M.D.,† of Osceola, Mo., has been appointed to take charge of District No. 7, a recently formed health unit consisting of Bates, Vernon, Henry, St. Clair, Cedar, Benton, Hickory, Polk, Morgan, Camden, Dallas, and Laclede Counties.

FRANCES HELEN ZEIGLER, R.N., has been appointed Director of the Vanderbilt University School of Nursing, Nashville, Tenn., succeeding SHIRLEY C. TITUS, R.N.,† resigned. Miss Zeigler has served as Dean of the Nursing Division of the Medical College of Virginia since 1929.

Western States

JOHN O. RAFFETY, M.D.,† of Oakland, Calif., has been appointed Health Officer of Yale County, at Woodland, Calif.

Foreign

DR. JAMES FENTON,* of London, a member of Executive Council of the Royal Institute of Public Health and Hygiene, was recently created a Commander of the British Empire (C.B.E.). Dr. Fenton is an Honorary Member of the American Public Health Association.

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* Fellow A.P.H.A.
† Member A.P.H.A.

CONFERENCES AND DATES

American Association of Railway Surgeons—23rd Annual Meeting. Palmer House, Chicago, Ill. September 19–23.

American Association of School Health. Kansas City, Mo. October 24–28.

American Association of State Registration Executives. Kansas City, Mo. October 25–28.

American Congress of Physical Therapy —17th annual scientific and clinical session. (Preceded by instruction seminar in physical therapy for physicians and technicians, September 7–10.) Palmer House, Chicago, Ill. September 12–15.

American Dental Association. Hotel Statler, St. Louis, Mo. October 24–28.

American Dietetic Association — 21st Annual Meeting. Hotel Schroeder, Milwaukee, Wis. October 9–14.

American Hospital Association. Dallas, Tex. September 26–30.

American Occupational Therapy Association—22nd annual. (Preceded by instruction seminar in physical therapy for physicians and technicians, September 7–10.) Palmer House, Chicago, Ill. September 12–15.

American Public Health Association — 67th Annual Meeting. Hotels Muehlebach, President, Kansas Citian, Kansas City, Mo. October 25–28.

American Public Works Association. New York, N. Y. October 3–5.

American Roentgen Ray Society. Atlantic City, N. J. September 20–23.

American Society of Civil Engineers. Rochester, N. Y. October 12–14.

American Water Works Association:
Rocky Mountain Section. Townsend Hotel, Casper, Wyo. September 12–13.
Michigan Section. Bancroft Hotel, Saginaw, Mich. September 14–16.
New York Section. Nelson House, Poughkeepsie, N. Y. September 22–23.
Minnesota Section. Minneapolis, Minn. September 29–October 1.
Wisconsin Section. Milwaukee, Wis. October 10–12.
Missouri Valley Section. Hotel Fort Des Moines, Des Moines, Ia. October 13–15.
Southwest Section. Biltmore Hotel, Oklahoma City, Okla. October 17–20.

Association of Dairy, Food and Drug Officials of the United States. Palmer House, Chicago, Ill. October 19–21.

Association of Military Surgeons of the United States. Mayo Clinic, Rochester, Minn. October 13–15.

Association of Women in Public Health —17th Annual Conference. Excelsior Springs, Mo., October 23–24; Kansas City, Mo., October 24.

California Association of Dairy and Milk Inspectors. Santa Barbara, Calif. September 6–9.

California League of Municipalities. Santa Barbara, Calif. September 6–9.

Conference of State Laboratory Directors. Kansas City, Mo. October 24.

Conference of State Sanitary Engineers. Kansas City, Mo. October 24.

Florida Public Health Association. Hollywood, Fla. December.

Hay Fever Association of America. Sault Ste. Marie, Mich. August 10–September 20.

International Association of Milk Sanitarians. Cleveland, Ohio. October 19–21.

International Society of Medical Health Officers. Kansas City, Mo. October 24.